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Repair Instructions

1 Babytherm 8004/8010 Service Strategy

Table 1: Service Strategy

	Test Documents	Repair
Inspection in the field	– Test Certificate – Microfiche	– Actual condition of the device – Minor repairs – Replacing non-repairable items
Safety check in the field	– Safety check of the Babytherm (record) – Type approval – Instructions for Use	– Checking the device's functional safety
Repair in the field	– Test Certificate – Spare parts list – Microfiche chapter "R" – Repair instructions – Service Bulletins (IDM) – Conversion instructions – Circuit diagrams – Function schematics	– Replacing electrical, electronic and mechanical assemblies – Repairing assemblies – Settings, calibrations – Simple conversions
Subsidiary workshop, region	– Test Certificate – Spare parts list – Microfiche chapter "R" – Repair instructions – Service Bulletins (IDM) – Conversion instructions – Circuit diagrams – Function schematics	– Replacing electrical, electronic and mechanical assemblies – Repairing assemblies – Settings, calibrations – Complex conversions

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Table 1: Service Strategy

Workshop in Lübeck	– Test Certificate – Spare parts list – Microfiche chapter “R” – Repair instructions – Service Bulletins (IDM) – Conversion instructions – Process and inspection instructions – Circuit diagrams – Function schematics	– Replacing all electrical, electronic and mechanical assemblies – Settings, calibrations – Complex conversions
Customer, owner, user	– Instructions for Use – Check list, if applicable	– Recording the actual condition of the device

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2 Babytherm 8004/8010 Assemblies

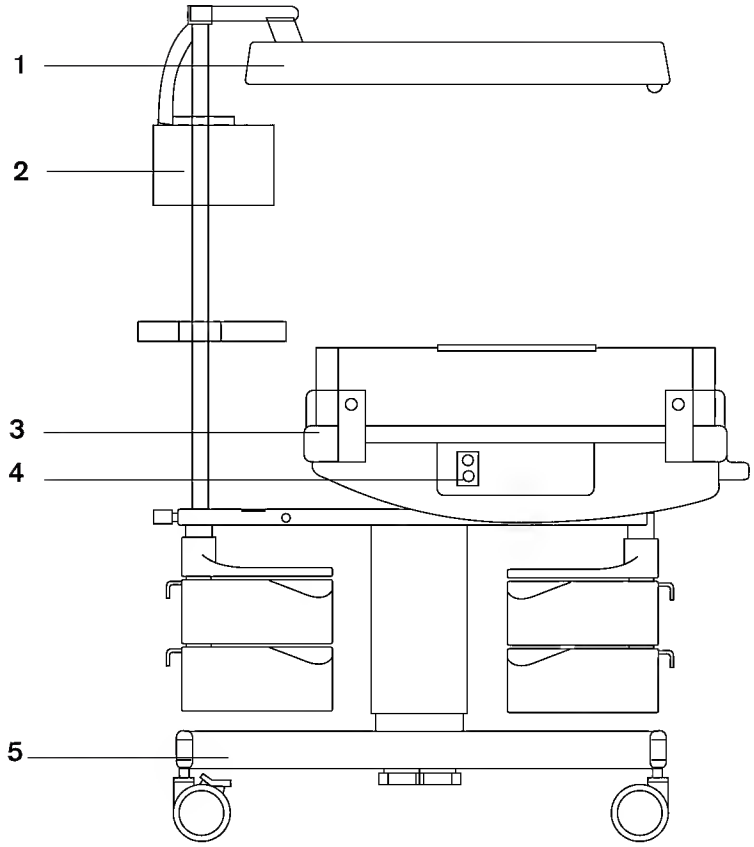

Fig. 1: Front view of the Babytherm 8010

Legend

1 Radiant heater

2 Control unit

3 Resting surface:

- with skin temperature control (Babytherm 8004)
- with skin temperature control and mattress heater (Babytherm 8010)

4 Skin temperature sensor connection port (Babytherm 8004/Babytherm 8010)

5 Trolley:

- with fixed column
- with electrical height adjustment (optional)

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3 Radiant Heater

3.1 Dismounting the Radiant Heater from the Trolley

- Set the electrical height adjustment (optional) of the Babytherm to the lowest position.
- Unplug the Babytherm power cord from the mains socket-outlet.

Hot parts! The halogen lamps or infrared rods may cause burns if touched shortly after use of the radiant heater.
Allow the radiant heater to cool off for at least 15 minutes before servicing.

- Swivel the radiant heater in your direction.
- Remove the fixing screws **1** from the T-cover plate **2**.
- Place the T-cover plate **2** aside.

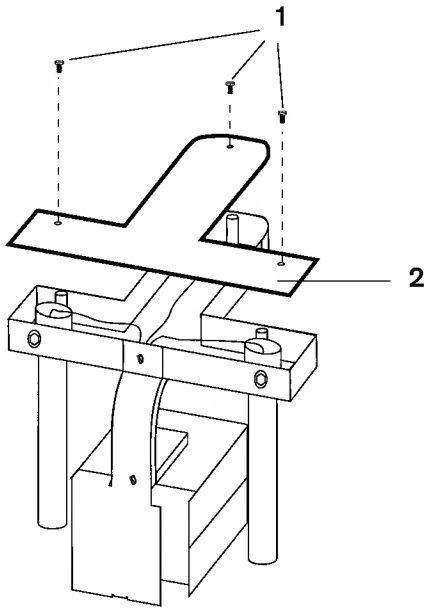

Fig. 2: Top view of the Babytherm, removing the T-cover plate

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- Remove the fixing screws **3** from the protective cover support **4**.
- Place the protective cover support **2** aside.

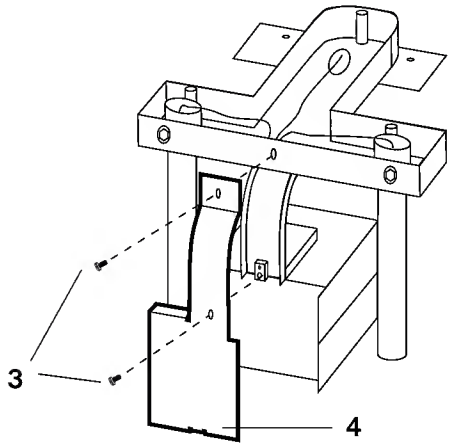

Fig. 3: Top view of the Babytherm, removing the protective cover support

- Disconnect the cable connector **5** from the control unit.

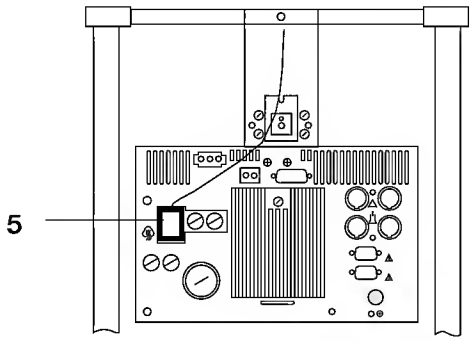

Fig. 4: Rear view of the control unit, disconnecting the cable connector

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- Remove the fixing screws and washers **6**.

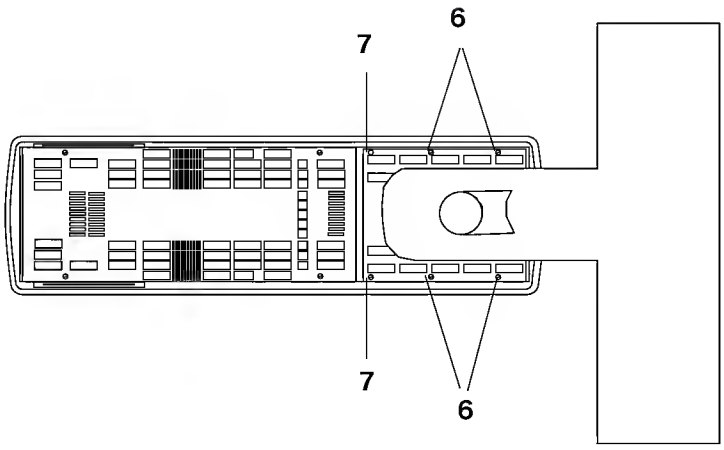

Fig. 5: Top view of the Babytherm 8004/8010

Risk of personal injury! Removing all fixing screws will detach the radiant heater from the trolley causing it to fall. **To avoid personal injury support the radiant heater with one arm while removing the fixing screws.**

Risk of damage! Removing all fixing screws will detach the radiant heater from the trolley causing it to fall. **To avoid damage to the radiant heater support it with one arm while removing the fixing screws.**

- Remove the fixing screws and washers **7** from the radiant heater (see Fig. above) and carefully thread the disconnected cable of the control unit through the articulated joint.
- Place the defective radiant heater aside.
- Mount the new radiant heater onto the Babytherm trolley using the reverse method of that used for dismounting the defective radiant heater.
- Mount the protective cover support onto the control unit.
- Mount the T-cover plate onto the trolley.
- Perform a function test on the radiant heater, see "Test Certificate".

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3.2 Mounting the Radiant Heater to the Trolley

Risk of personal injury. The radiant heater is heavy and may fall down when mounted to the trolley by one person only. **To avoid this, mount the radiant heater to the trolley with the help of a second person.**

- Mount the radiant heater to the trolley. To do so, thread the cable protruding from the radiant heater through the articulated joint and secure the radiant heater to the trolley using the fixing screws and washers **1**. (Note: The tightening torque for the fixing screws is 3 +0,5 Nm.)
- Secure the fixing screws **1** with Loctite 221.

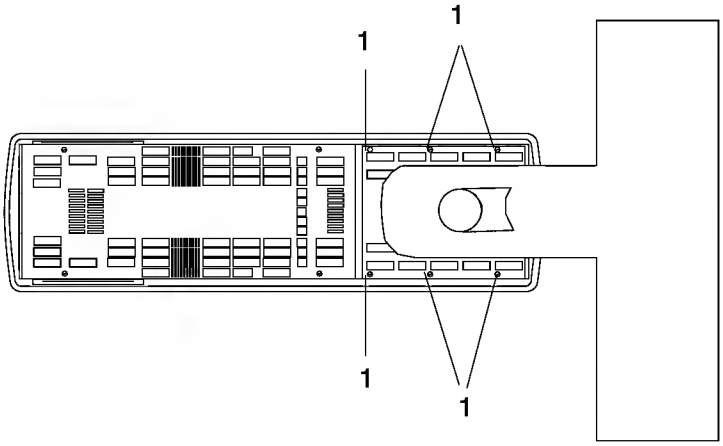

Fig. 6: Babytherm (top view)

- Connect the cable connector **2** to the control unit.

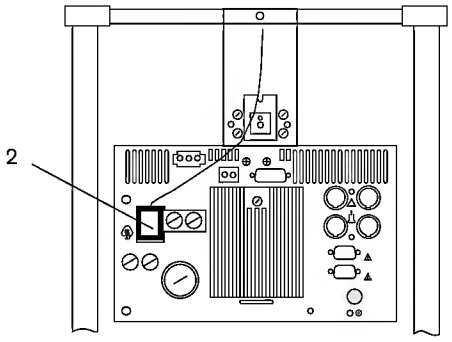

Fig. 7: Control unit (rear view); connecting the cable connector

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- Mount the grounding cable using the fixing screw and spring washer **1**.

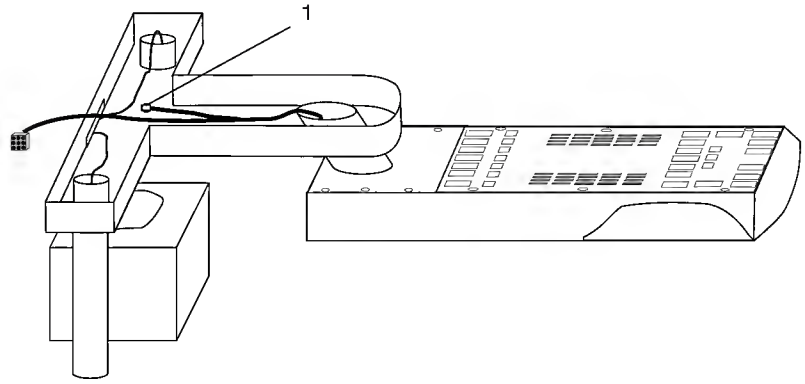

Fig. 8: Side view of the T-piece, mounting the grounding cable

- Secure the protective cover support using the fixing screws **2**.

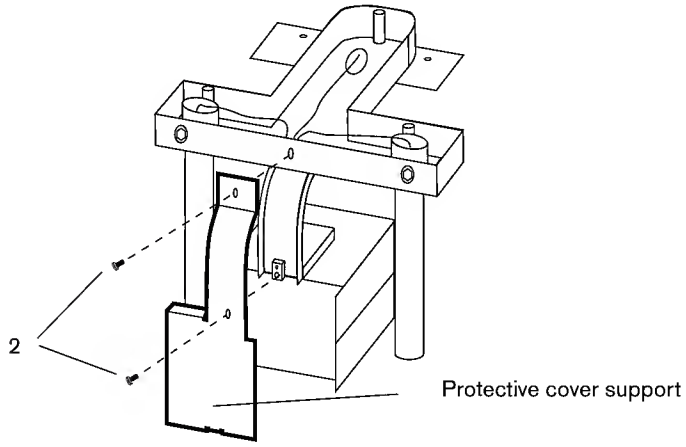

Fig. 9: Babytherm (top view); mounting the protective cover support

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- Mount the T-cover plate **2** to the trolley using the fixing screws **3**.

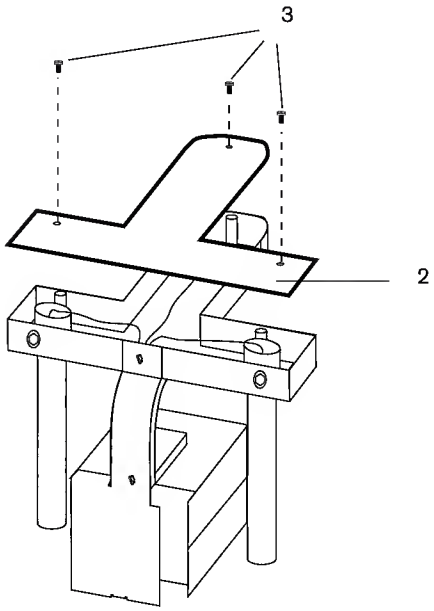

Fig. 10: Babytherm (top view); mounting the T-cover plate

- Test the function of the radiant heater, see "Test Certificate".

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3.3 Infrared Rods

3.3.1 General Information About the Infrared Rods

If the infrared rods of the radiant heater are defective they must be replaced.

3.3.2 Checking the Infrared Rods

- Press the “skin/man” key and activate the “man” function.
- Press the OK key.
- Use the arrow keys to adjust heating level “1”.

The desired heating level “1” is indicated by one bar LED on the 8004/8010 control unit. The infrared rods of the radiant heater radiate a lower amount of heat (to check, hold open hands at approx. 30 cm from the infrared rods).

- Use the arrow keys to adjust heating level “6”.

The desired heating level “6” is indicated by six bar LEDs on the 8004/8010 control unit. The infrared rods of the radiant heater radiate a higher amount of heat (to check, hold open hands at approx. 30 cm from the infrared rods).

3.3.3 Checking the Infrared Rods with an Ohmmeter

- Disconnect cable connector 1 from the control unit.

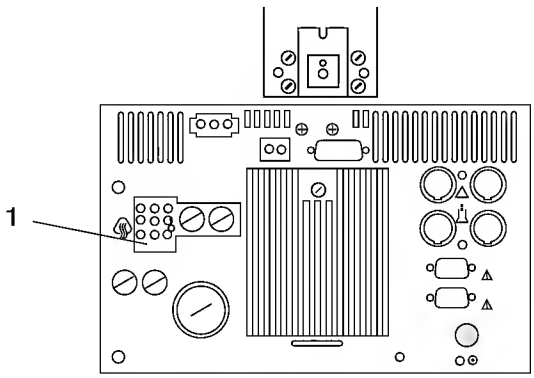

Fig. 11: Rear view of the control unit

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- Connect test probes of ohmmeter to pin contacts **1** and **2** of the cable connector.

The measured resistance should be approx. 86 ohms.

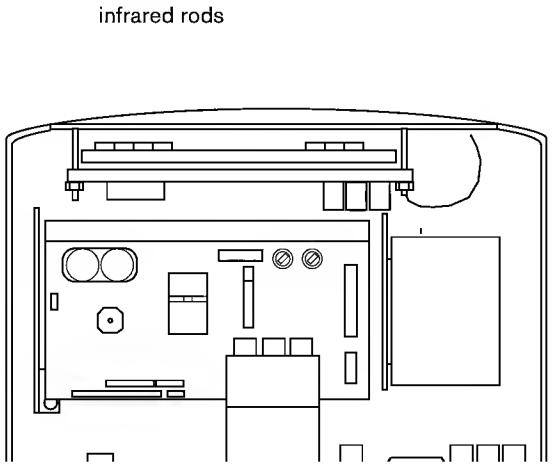

Fig. 12: Cable connector pins

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3.3.4 Replacing an Infrared Rod

- Set the electrical height adjustment (optional) of the Babytherm to the lowest position.
- Unplug the Babytherm power cord from the mains socket-outlet.

Hot parts! The halogen lamps or infrared rods may cause burns if touched shortly after use of the radiant heater.
Allow the radiant heater to cool off for at least 15 minutes before servicing.

- Swivel the radiant heater in your direction.
- Remove the screws and washers **1** from the cover **2** and place the cover **2** aside.

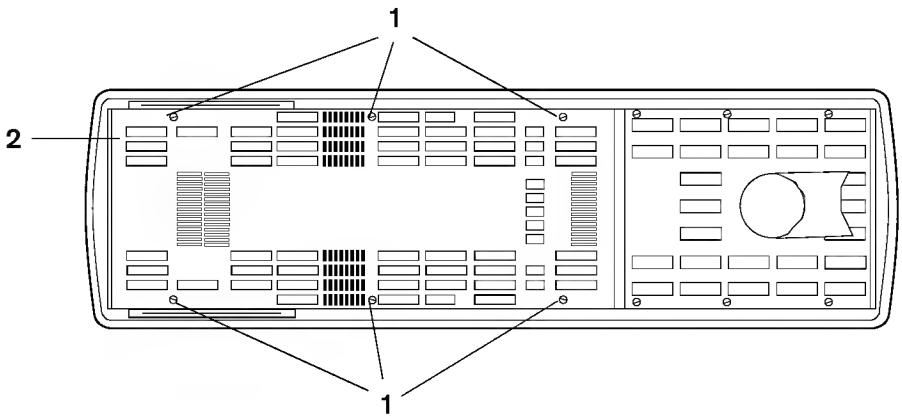

Fig. 13: Top view of the radiant heater, removing the cover

- Disconnect the cables of the defective infrared rod from the terminals **3**.

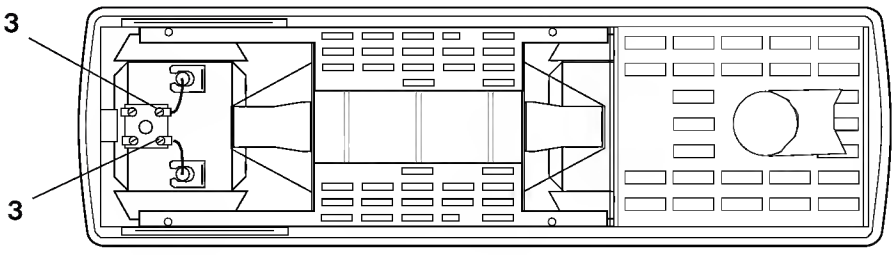

Fig. 14: Top view of the radiant heater, disconnecting the cables

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- Hold the defective infrared rod from the underside and remove the clamps **4** by pushing them aside.
- Thread the cables of the defective infrared rod through the holes of the radiant heater and pull the defective infrared rod down and out of the radiant heater.
- Dispose of the defective infrared rod according to local waste disposal regulations.

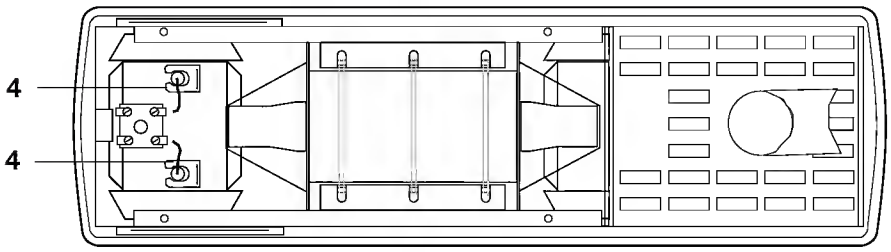

Fig. 15: Top view of the radiant heater, removing the clamps

- Mount the new infrared rod using the reverse method of that used for dismounting the defective infrared rod.
- Perform a function test on the infrared rod, see "Checking the Infrared Rods".
- Check Babytherm using the Test Certificate, see "Test Certificate".

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3.4 Work Light/Night Light

3.4.1 General Information About the Work Light/Night Light

The work light or the night light of the radiant heater must be replaced if they are defective.

3.4.2 Checking the Work Light

- Plug the Babytherm power cord into the mains socket outlet.
- Switch on the Babytherm.
- Press the work light key.

The energy-saving lamps of the radiant heater are switched on.

- Press the work light key again.

The energy-saving lamps of the radiant heater are switched off.

3.4.3 Checking the Night Light

- Plug the Babytherm power cord into the mains socket outlet.
- Switch on the Babytherm.
- Press the night light key.

The small energy-saving lamp of the radiant heater is switched on.

- Press the night light key again.

The small energy-saving lamp of the radiant heater is switched off.

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3.4.4 Replacing the Night Light

- Set the electrical height adjustment (optional) of the Babytherm to the lowest position.
- Unplug the Babytherm power cord from the mains socket-outlet.

Hot parts! The halogen lamps or infrared rods may cause burns if touched shortly after use of the radiant heater. **Allow the radiant heater to cool off for at least 15 minutes before servicing.**

- Swivel the radiant heater in your direction.
- Remove the defective energy-saving lamp **1** (night light) by holding the lamp mount **2** and by turning the energy-saving lamp counter-clockwise.

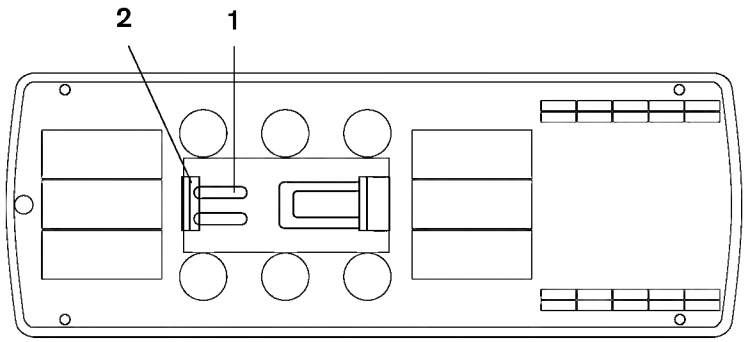

Fig. 16: View on the actuators of the radiant heater, removing the night light

- To mount the new energy-saving lamp **1** (night light) hold the lamp mount **2** and tighten the energy-saving lamp by turning it clockwise.
- Mount the Babytherm using the reverse method of that used for dismounting.
- Plug the Babytherm power cord into the mains socket outlet.
- Check the function of the energy-saving lamp **1** (night light) by pressing the night light key.

The night light of the radiant heater should come on.

- Check Babytherm using the Test Certificate, see "Test Certificate".

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3.4.5 Replacing the Work Light

- Set the electrical height adjustment (optional) of the Babytherm to the lowest position.
- Unplug the Babytherm power cord from the mains socket-outlet.

Hot parts! The halogen lamps or infrared rods may cause burns if touched shortly after use of the radiant heater. **Allow the radiant heater to cool off for at least 15 minutes before servicing.**

- Swivel the radiant heater in your direction.
- Remove the defective energy-saving lamp **1** (work light) by holding the lamp mount **2** and by turning the energy-saving lamp **1** counter-clockwise.

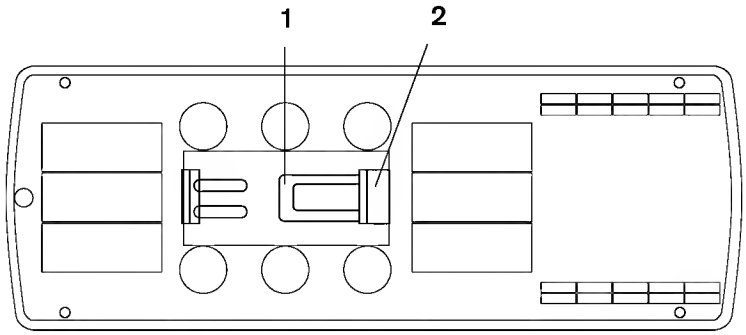

Fig. 17: Bottom view of the radiant heater, dismounting the work light

- To mount the new energy-saving lamp **1** (work light) hold the lamp mount **2** and tighten the energy-saving lamp by turning it clockwise.
- Mount the Babytherm using the reverse method of that used for dismounting.
- Plug the Babytherm power cord into the mains socket outlet.
- Check the function of the energy-saving lamp **1** (work light) by pressing the work light key.

Both energy-saving lamps of the radiant heater should come on.

- Check Babytherm using the Test Certificate, see "Test Certificate".

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3.5 Central Alarm PCB

3.5.1 General Information About the Central Alarm PCB

If the Central Alarm PCB is defective, it should be replaced completely.

3.5.2 Checking the Central Alarm PCB

- Plug the Babytherm power cord into the mains socket outlet.
- Switch on the Babytherm.
- Press the Check key.

The central alarm lamp (located on the Central Alarm PCB) should flash.

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3.5.3 Replacing the Central Alarm PCB

- Set the electrical height adjustment (optional) of the Babytherm to the lowest position.
- Unplug the Babytherm power cord from the mains socket-outlet.

Hot parts! The halogen lamps or infrared rods may cause burns if touched shortly after use of the radiant heater. **Allow the radiant heater to cool off for at least 15 minutes before servicing.**

- Swivel the radiant heater in your direction.
- Remove the screws and washers **1** of the cover **2** and place the cover **2** aside.

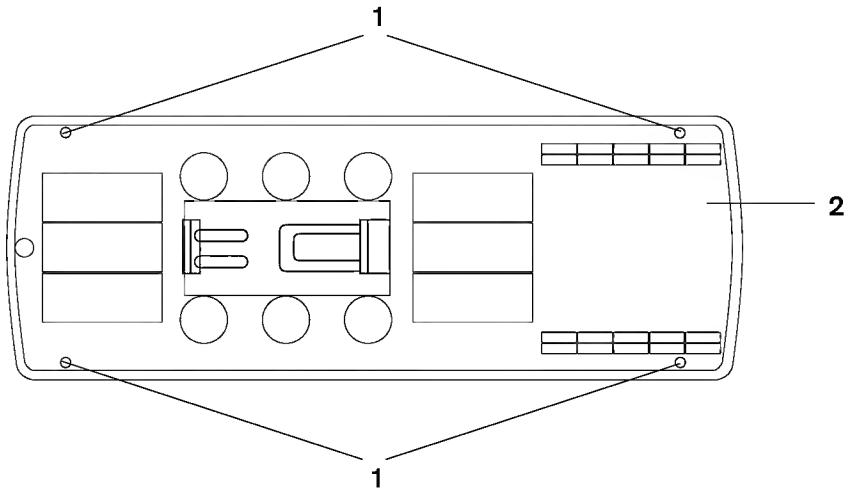

Fig. 18: Bottom view of the radiant heater, removing the cover

- Disconnect the connector **3** from the Central Alarm PCB **4**.

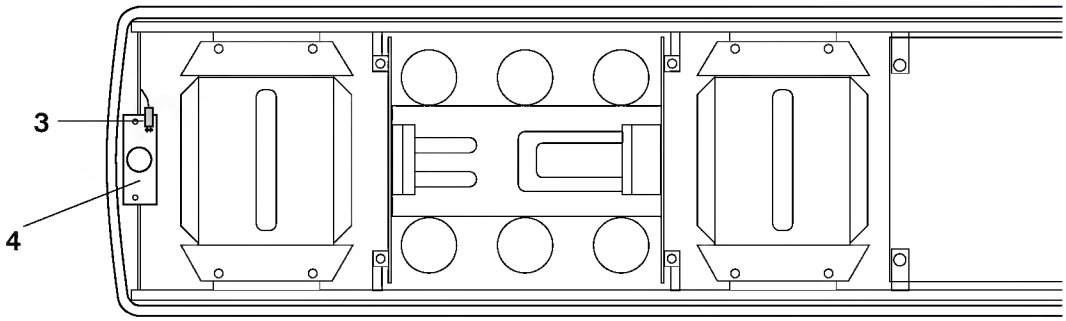

Fig. 19: Bottom view of the radiant heater, removing the connector

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- Compress the printed circuit board mount **1** and remove the Central Alarm PCB.

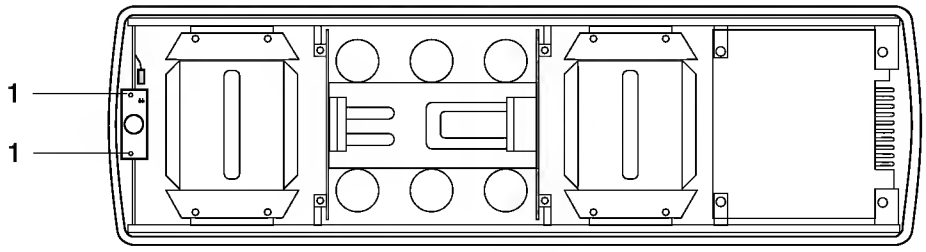

Fig. 20: Bottom view of the radiant heater, removing the Central Alarm PCB

- Replace the defective Central Alarm PCB with a new one.
- Mount the radiant heater using the reverse method of that used for dismounting.
- Connect the Babytherm power cord into the mains socket outlet.
- Switch on the Babytherm.
- Press the Check key.

The central alarm lamp (located on the Central Alarm PCB) should flash.

- Check Babytherm using the Test Certificate, see "Test Certificate".

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3.6 Phototherapy (Optional)

The phototherapy of the radiant heater consists of the following assemblies:

- Switched-Mode Power Supply PCB;
- six halogen lamps;
- two thermostats.

The thermostats of the phototherapy are connected in series with the halogen lamps. If one thermostat is defective, it will not be possible to switch on the phototherapy (halogen lamps).

3.6.1 General Information About the Halogen Lamps

The **complete** set of halogen lamps should be replaced after 1000 operating hours or in the event of a failure.

Two halogen lamps each are connected in series. Therefore, if one halogen lamp fails, the other one of the respective pair will not come on either.

3.6.2 Checking the Halogen lamps

- Plug the Babytherm power cord into the mains socket outlet.
- Switch on the Babytherm.
- Press the phototherapy key on the control unit.
- Press the OK key.

All halogen lamps in the radiant heater come on.

- Press the phototherapy key again.
- Press the OK key.

All halogen lamps in the radiant heater go out.

- Check Babytherm using the Test Certificate, see "Test Certificate".

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3.6.3 Checking the Thermostat

- Set the electrical height adjustment (optional) of the Babytherm to the lowest position.
- Switch off the Babytherm.
- Unplug the Babytherm power cord from the mains socket-outlet.

Hot parts! The halogen lamps or infrared rods may cause burns if touched shortly after use of the radiant heater. **Allow the radiant heater to cool off for at least 15 minutes before servicing.**

- Swivel the radiant heater in your direction.
- Remove the fixing screws and washers **1** which secure the cover **2** and place the cover aside.

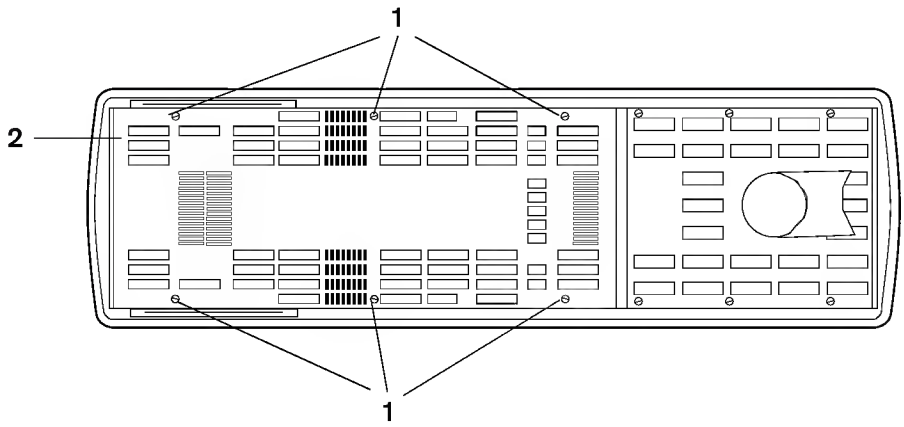

Fig. 21: Top view of the radiant heater, removing the fixing screws

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- Measure the contact resistance of thermostat 1.

The contact resistance of the thermostat should be approx. 0 ohms.

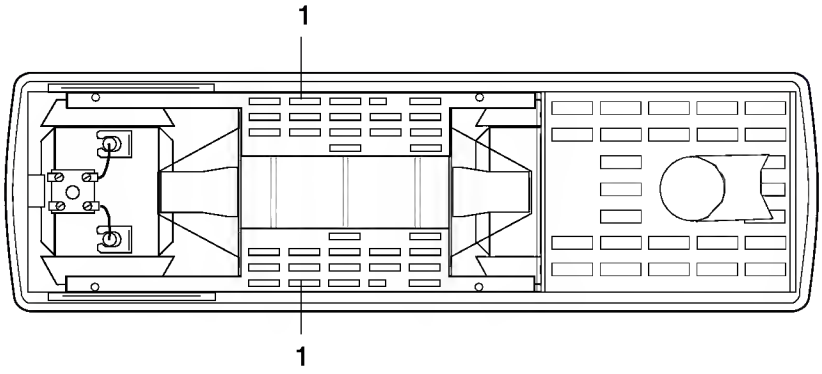

Fig. 22: Top view of the radiant heater, mounting position of the thermostat

If the thermostat has an infinite contact resistance, it is defective.

- Replace the defective thermostat with a new one.
- Make sure that the protective screen which cover the thermostats has not been pushed into the radiant heater.

The clearance of the protective screen to the terminals of the thermostats must be at least 2.5 mm.

- Secure the cover to the radiant heater using fixing screws and washers.
- Plug the Babytherm power cord into the mains socket-outlet.
- Switch on the Babytherm.
- Press the phototherapy key.

All halogen lamps in the radiant heater should come on.

- Perform a leakage current measurement using the Test Certificate, see "Test Certificate".

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3.6.4 Replacing the Halogen Lamps

- Set the electrical height adjustment (optional) of the Babytherm to the lowest position.
- Unplug the Babytherm power cord from the mains socket-outlet.

Hot parts! The halogen lamps or infrared rods may cause burns if touched shortly after use of the radiant heater. **Allow the radiant heater to cool off for at least 15 minutes before servicing.**

- Swivel the radiant heater in your direction.
- Remove the screws and washers **1** of the cover **2** and place the cover **2** aside.

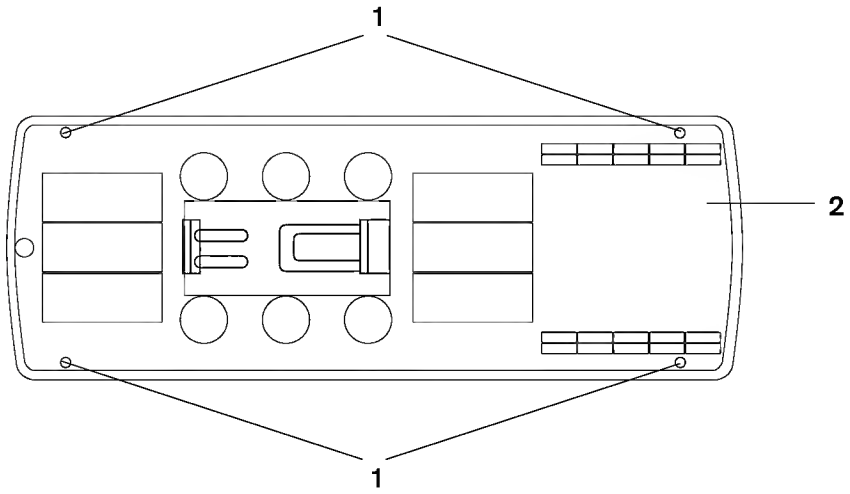

Fig. 23: Bottom view of the radiant heater, removing the cover

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- Remove the halogen lamps **1** by pulling them out together with the halogen lamp supports.

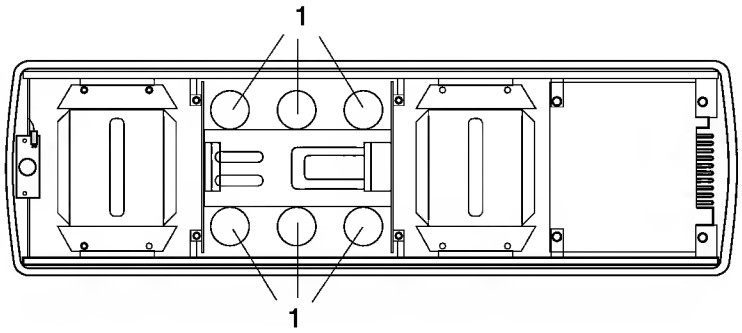

Fig. 24: Bottom view of the radiant heater, removing the halogen lamps

- Mount the new halogen lamps including halogen lamp supports **2** into the radiant heater.

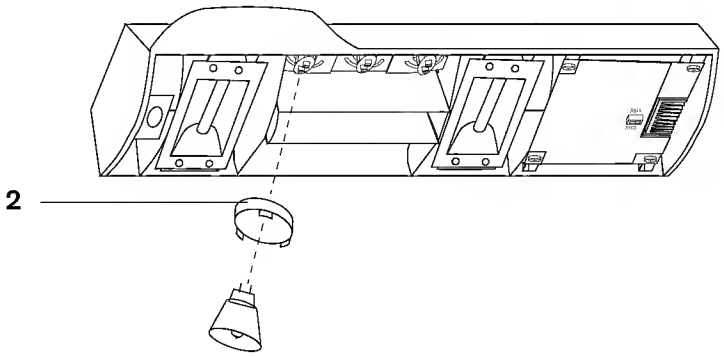

Fig. 25: Top view of the radiant heater, mounting the halogen lamps

- Mount the radiant heater using the reverse method of that used for dismounting.
- Plug the Babytherm power cord into the mains socket outlet.
- Switch on the Babytherm.
- Press the phototherapy key.
- Press the OK key (only Babytherm 8004/Babytherm 8010).

All halogen lamps come on.

- Activate the DrägerService Mode "Mode c04: Displaying/Resetting the Operating Time Meter of the Phototherapy" and reset the phototherapy operating hours counter.
- Check Babytherm using the Test Certificate, see "Test Certificate".

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4 Control Unit

4.1 Dismounting the Control Unit from the Trolley

- Unplug the Babytherm power cord from the mains socket-outlet.
- Observe antistatic precautions.
- Remove the screws **1** from the protective cover support **2**.
- Place the protective cover support **2** aside.

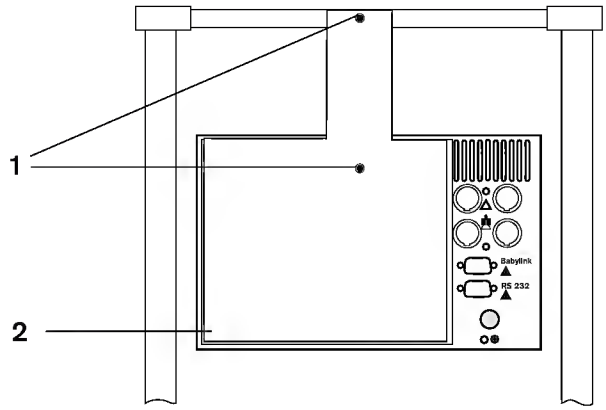

Fig. 26: Side view of the Babytherm, dismounting the cover plate

- Disconnect cable connector **3** from the control unit.
- Disconnect cable connector **4** (Babytherm 8010).
- Disconnect cable connector **5**.

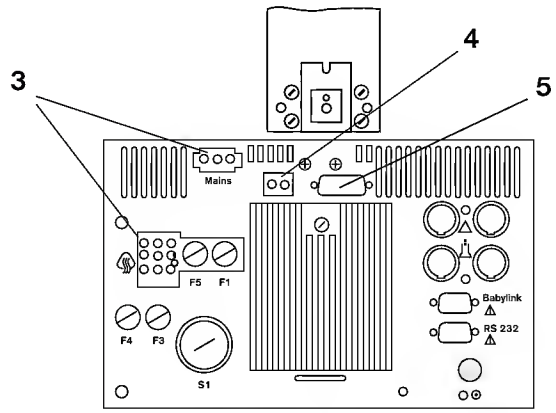

Fig. 27: Rear view of the control unit, disconnecting the cable connections

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Risk of personal injury and damage to equipment! Removing all fixing screws will detach the control unit from the trolley causing it to fall. **To avoid personal injury and damage to the radiant heater support the control unit with one hand while removing the fixing screws.**

- Loosen the fixing screws **6** using an Allen wrench (minimum length: 15 cm, minimum size: 3 mm).

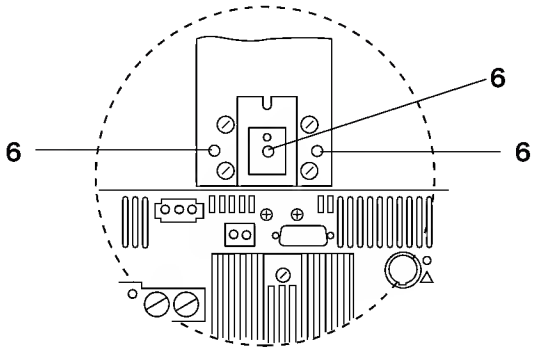

Fig. 28: Rear view of the control unit (section), dismounting the control unit from the trolley

- Remove the defective control unit and mount the new control unit to the Babytherm trolley using the reverse method of that used for removing the defective one.

For servicing purposes the Babytherm control unit can be hung on the Babytherm trolley.

- Check Babytherm using the Test Certificate, see "Test Certificate".

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4.2 Opening the Control Unit

- Unplug the Babytherm power cord from the mains socket-outlet.

Electrostatic discharge may damage electrostatic sensitive devices. Use a static-dissipative mat and a wrist strap when handling electrostatic sensitive devices.

- Remove the control unit from the trolley. To do so, remove the screws and washers.
- Lift the bottom cover of the control unit and place the bottom cover aside.

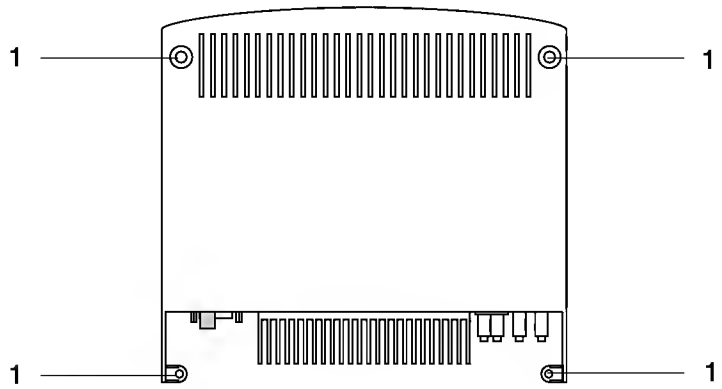

Fig. 29: Bottom view of the control unit

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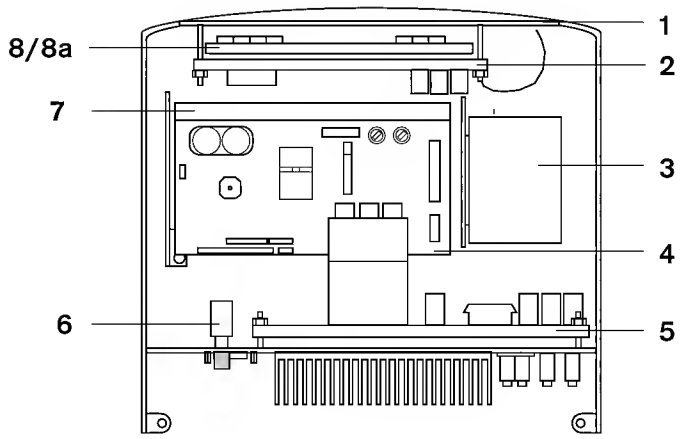

Fig. 30: Control unit assemblies

Legend

1	Keypad 8004/Keypad 8010
2	WT Front PCB
3	Toroidal-core power transformer
4	WT Power PCB
5	WT Relay PCB
6	ON/OFF switch
7	WT Controller PCB (below the WT Power PCB)
8	WT LED PCB 8004/WT LED PCB 8010
8a	Text display

The following devices/assemblies must be replaced completely if they are defective:

- Fuses
- Toroidal-core power transformer
- ON/OFF switch
- WT Controller PCB
- WT Relay PCB
- WT Power PCB
- 8004 WT LED PCB/8010 WT LED PCB
- WT Front PCB
- 8004 keypad/8010 keypad
- Text display

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5 Toroidal-Core Power Transformer

5.1 General Information About the Toroidal-Core Power Transformer

If the toroidal-core power transformer is defective, it must be replaced with a new one.

5.2 Checking the Output Voltages of the Toroidal-Core Power Transformer

- Unplug the Babytherm power cord from the mains socket-outlet.
- Hang the control unit on the trolley (see Repair Instructions "Dismounting the Control Unit from the Trolley".
- Open the control unit (see Repair Instructions "Opening the Control Unit".
- Plug the Babytherm power cord to the mains socket outlet.
- Switch on the Babytherm.
- Measure the output voltages of the toroidal-core power transformer (located on the WT Power PCB): 9 VAC and 24 VAC (mattress heater).

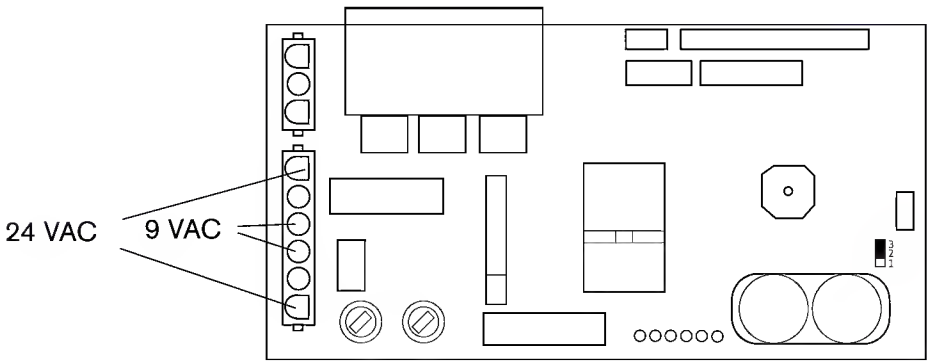

Fig. 31: WT Power PCB, measuring the output voltages of the toroidal-core power transformer

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5.2.1 Replacing the Toroidal-Core Power Transformer

- Unplug the Babytherm power cord from the mains socket-outlet.
- Hang the control unit on the trolley (see Repair Instructions, "Dismounting the Control Unit from the Trolley".
- Open the control unit (see Repair Instructions "Opening the Control Unit").
- Follow antistatic precautions.
- Disconnect the cable connector of the loudspeaker from the WT Front PCB.
- Remove the plate with the loudspeaker from the control unit and place it aside.
- Disconnect the flexible cable connector of the front membrane from the WT Front PCB.
- Disconnect the connector **2** of the toroidal-core power transformer from the WT Power PCB.

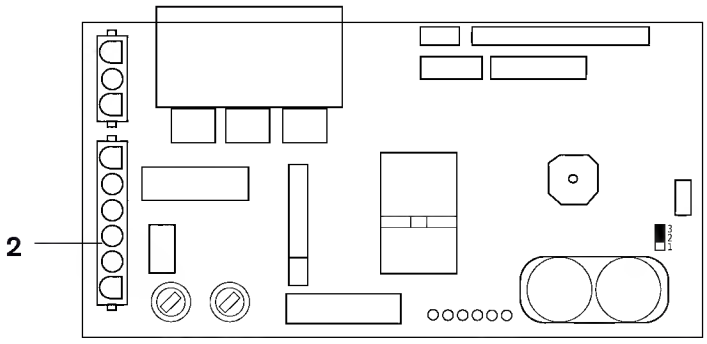

Fig. 32: WT Power PCB, disconnecting the connector

- Disconnect the connectors **3** of the toroidal-core power transformer from the WT Relay PCB.

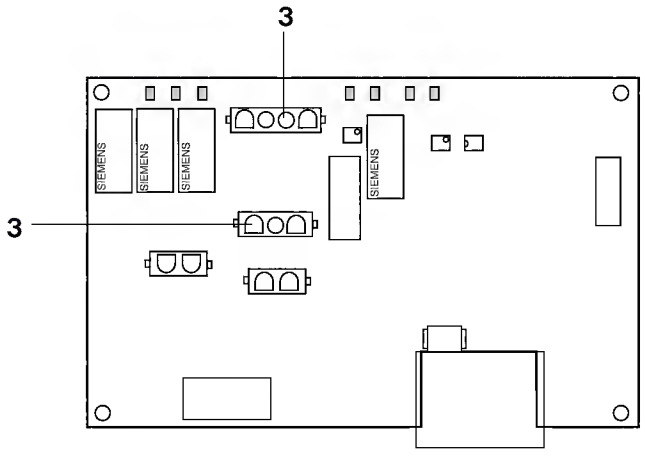

Fig. 33: WT Relay PCB, disconnecting the connectors

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- Mark the mounting position of the ON/OFF switch cable connector **1** for later reassembly.
- Disconnect the ON/OFF switch cable connector **1** from the WT Power PCB.
- Disconnect the connectors **2** from the WT Power PCB.

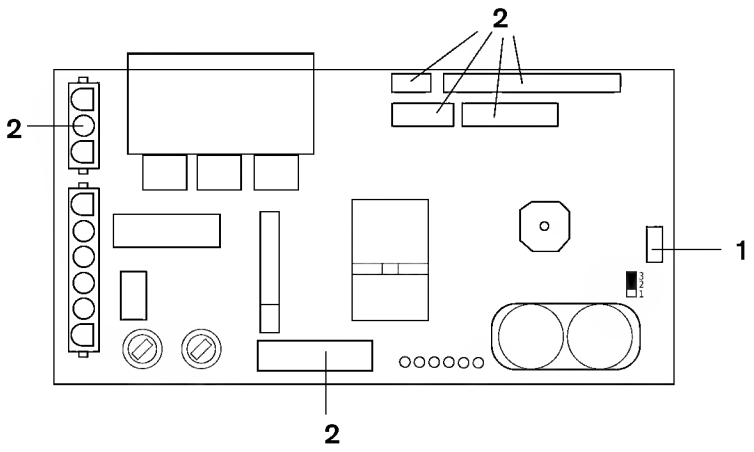

Fig. 34: WT Power PCB, disconnecting the connectors

- Remove the fixing screw and washer **3** from the rear panel.

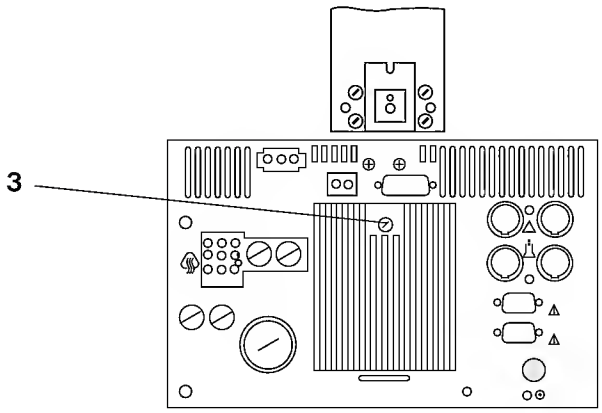

Fig. 35: Rear view of the control unit, removing the fixing screw and washer

- Remove the WT Power PCB by sliding it off the guide rails.

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- Hold the toroidal-core power transformer and remove the fixing screw **1**.

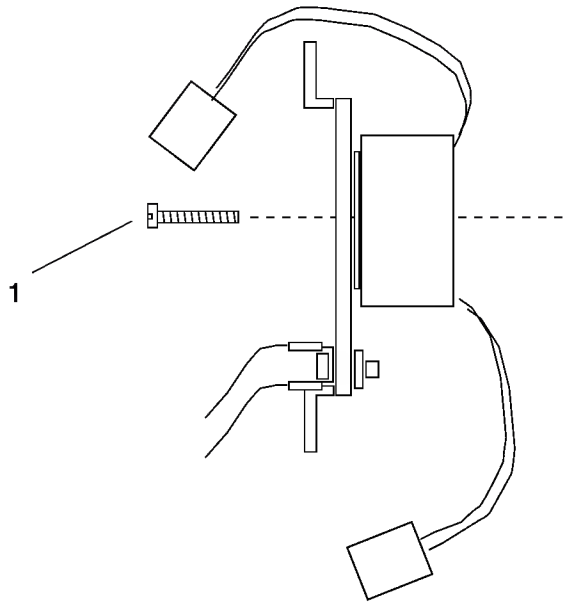

Fig. 36: Dismounting/mounting the toroidal-core power transformer

- Replace the defective toroidal-core power transformer with a new one.
- Secure the toroidal-core power transformer with the fixing screw **1**.
- Mount the WT Power PCB into the control unit.
- Re-connect the cables of the toroidal-core power transformer to the WT Power PCB and the WT Relay PCB.
- Plug the cable connectors into the WT Power PCB (pay attention to the mounting position of the ON/OFF switch, see markings).
- Mount the control unit using the reverse method of that used for dismounting.
- Mount the control unit on the Babytherm trolley.
- Check Babytherm using the Test Certificate, see "Test Certificate".

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5.3 WT Power PCB

5.3.1 General Information About the WT Power PCB

In case of repair, replace the fuses located on the WT Power PCB or the complete WT Power PCB must be replaced.

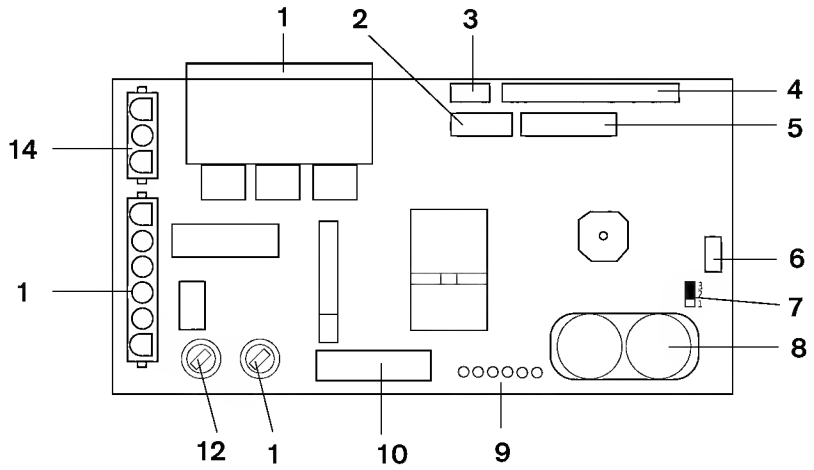

Fig. 37: WT Power PCB components layout

Legend

1	Amplifier and voltage regulator
2	Connection port for WT Relay PCB
3	Connection port for WT Controller PCB
4	Connection port for WT Controller PCB
5	Connection port for WT Sensor PCB
6	Connection port for ON/OFF switch
7	Jumper (buzzer off)
8	GoldCap
9	Test points
10	Connection port for WT Front PCB
11	Fuse F10 (T2.5A)
12	Fuse F11 (T6.3A)
13	Connection port for toroidal-core power transformer
14	Connection port for mattress heater

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5.3.2 Checking the WT Power PCB

- Switch off the control unit.
- Unplug the Babytherm power cord from the mains socket-outlet.
- Hang the control unit on the trolley (see Repair Instructions, "Dismounting the Control Unit from the Trolley").
- Open the control unit (see Repair Instructions "Opening the Control Unit").
- Follow antistatic precautions.
- Check the fuses **1**, located on the WT Power PCB.

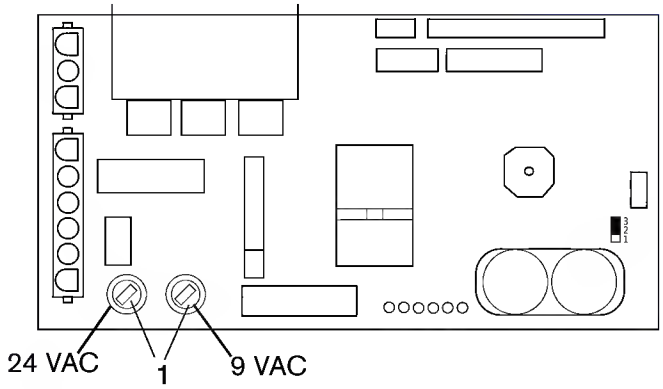

Fig. 38: WT Power PCB, checking the fuses

- Plug the Babytherm power cord into the mains socket-outlet.
- Switch on the Babytherm.
- Switch on the mattress heater (Babytherm 8010).
- Check the following voltages on the WT Power PCB.

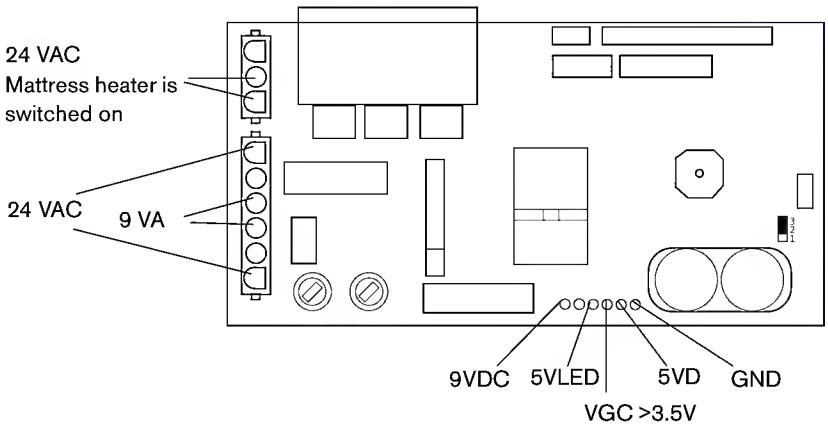

Fig. 39: Checking the voltages

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5.3.3 Checking the Mattress Control Using Uniboard 40 (Babytherm 8010)

- Unplug the Babytherm power cord from the mains socket-outlet.
- Hang the control unit on the trolley (see Repair Instructions, "Dismounting the Control Unit from the Trolley").
- Open the control unit (see Repair Instructions "Opening the Control Unit").

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- Connect the Babytherm to the Uniboard 40 as follows:.
  - Pin 1 to ground.
  - Pin 3 to 5 Vdc.
  - Pin 13 to mattress heater control.
  - Pin 36 to safety relay.
  - Pin 20 to mattress heater feedback.
- Plug the Babytherm power cord into the mains socket-outlet.
- Switch on the Babytherm 8010.

If 5 Vdc are present, the control and feedback of the mattress heater are OK.

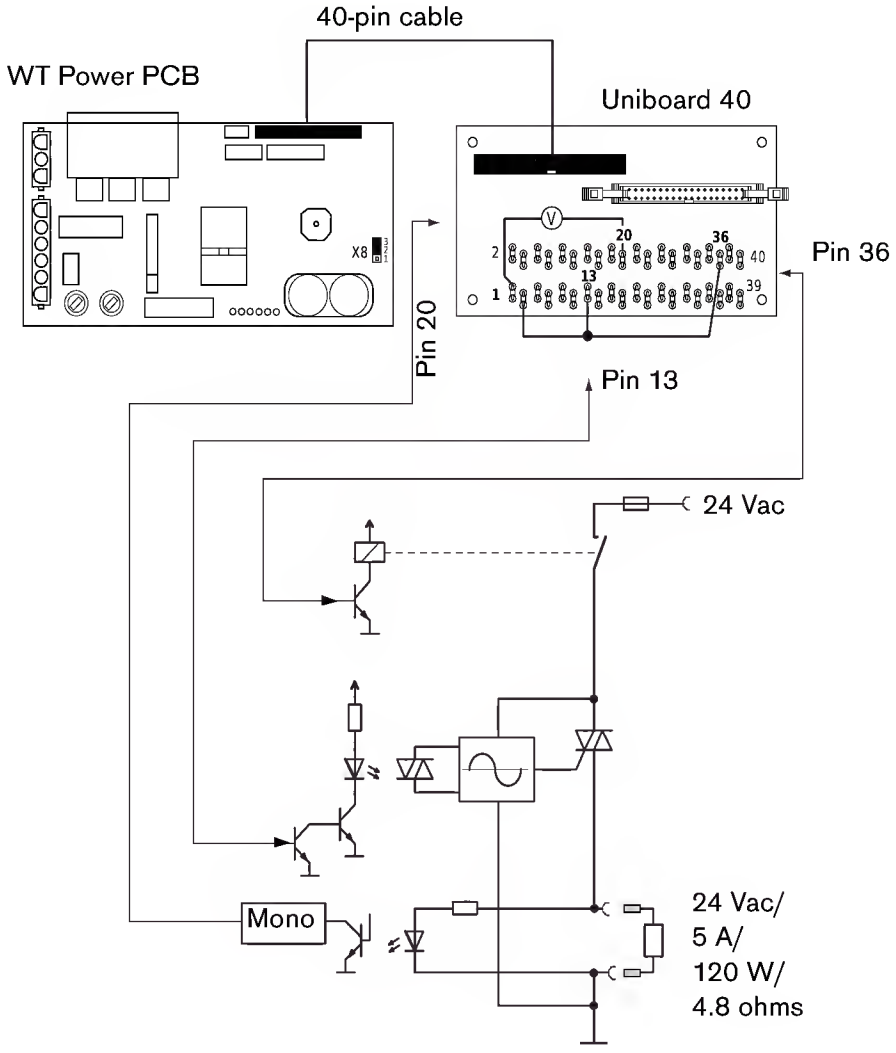

Fig. 40: Test set-up with Uniboard 40

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If 5 Vdc are not present, the mattress heater should be re-checked as follows:

- Switch off the Babytherm.
- Unplug the Babytherm 8010 power cord from the mains socket outlet.
- Disconnect the connector 1 from the mattress heater.
- Connect the multimeter to the disconnected connector between pin 2 and pin 3.

The measured resistance should be approx. 4.8 ohms.

- If the measured resistance is 4.8 ohms, replace the WT Power PCB.

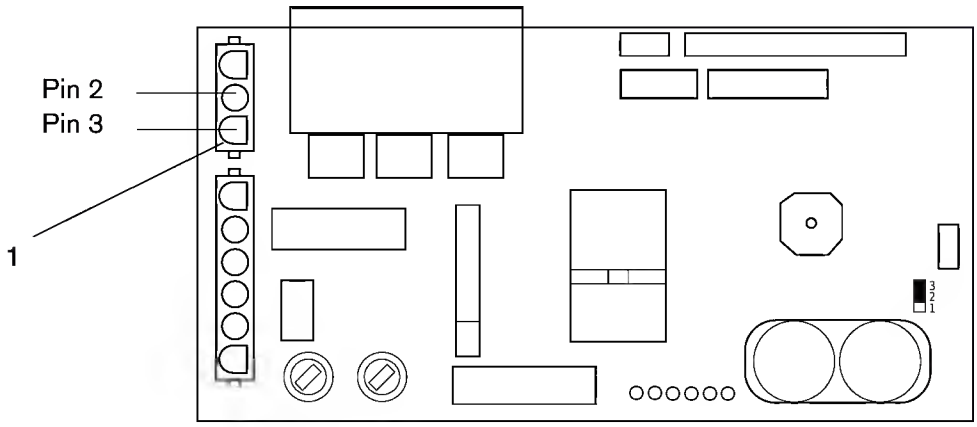

Fig. 41: WT Power PCB components, measuring the resistance of the mattress heater

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5.3.4 Checking the Mattress Heater via DrägerService Mode (Babytherm 8010)

- Check the safety relay of the mattress heater using the DrägerService Mode, see DrägerService Mode, "Mode d13: Testing the Solid State Relay of the Mattress Heater (Babytherm 8010)".
- Check the activation and feedback of the mattress heater using the DrägerService Mode, see DrägerService Mode, "Mode d14: Switching the Mattress Heater On/Off (Babytherm 8010)".

5.3.5 Checking the GoldCap voltage via the DrägerService Mode

- Switch on Babytherm and use the DrägerService Mode, see "Mode d07: Displaying the GoldCap Voltage".

5.3.6 Measuring the GoldCap Voltage using Uniboard 40

- Switch off the Babytherm.
- Unplug the Babytherm power cord from the mains socket-outlet.
- Hang the control unit on the trolley (see Repair Instructions, "Dismounting the Control Unit from the Trolley").
- Open the control unit (see Repair Instructions "Opening the Control Unit").
- Connect the Babytherm to the Uniboard 40 as follows:

– Pin 1 to ground

– Pin 27 to GoldCap voltage

The GoldCap voltage should be > 3.5 Vdc.

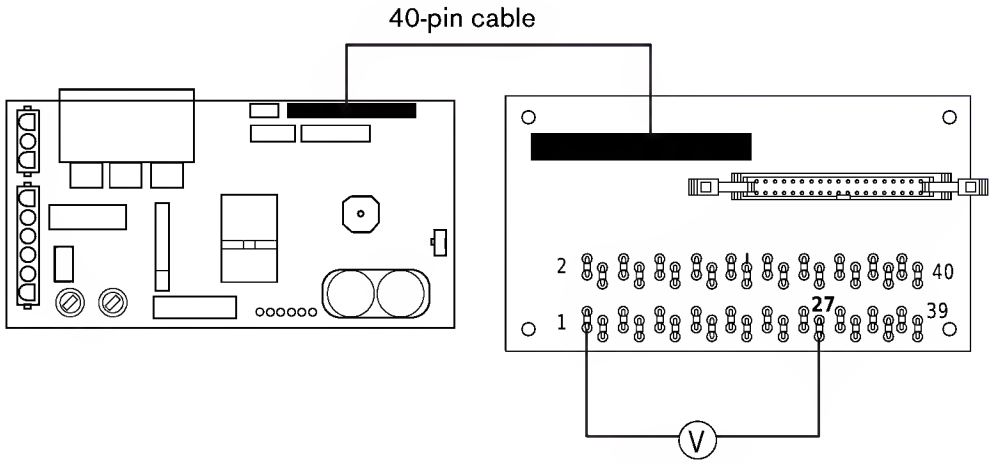

Fig. 42: Test set-up, measuring the GoldCap voltage

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If the GoldCap voltage is below 3.5 Vdc, proceed as follows:

- Disconnect the Uniboard 40.
- Connect the cable connector of the WT Controller PCB to the WT Power PCB.
- Plug the Babytherm power cord into the mains socket-outlet.
- Switch on the Babytherm.
- Leave the Babytherm connected to the voltage supply for 30 minutes in order to charge the GoldCap sufficiently.
- Repeat the above test.
- If the GoldCap voltage exceeds 3.5 Vdc, mount the control unit using the reverse method of that used for dismounting.
- If the GoldCap voltage remains below 3.5 Vdc, replace the WT Power PCB, see "Replacing the WT Power PCB".

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5.3.7 Replacing the WT Power PCB

- Switch off the Babytherm.
- Unplug the Babytherm power cord from the mains socket-outlet.
- Hang the control unit on the trolley (see Repair Instructions, "Dismounting the Control Unit from the Trolley").
- Open the control unit (see section Repair Instructions "Opening the Control Unit").
- Remove the fixing screw and washer 1 on the rear panel of the control unit.

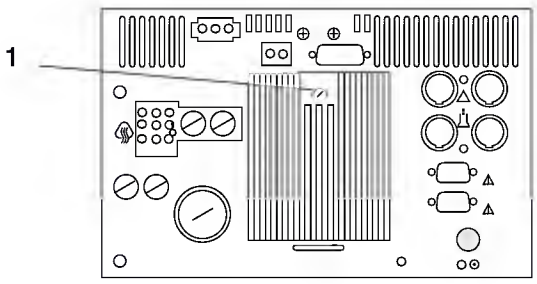

Fig. 43: Rear view of the control unit, loosening the fixing screw

- Disconnect the grounding line of the WT Power from the grounding terminal.

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- Remove the jumper (alarm encoder) from the old WT Power PCB and mount it on the new WT Power PCB. Make sure to jumper pin 2 and pin 3.
- Disconnect the connectors **1** from the WT Power PCB (Babytherm 8010).
- Mark the position of the cable connector **2** (ON/OFF switch) for later reassembly.
- Disconnect the connectors **2** from the ON/OFF switch.

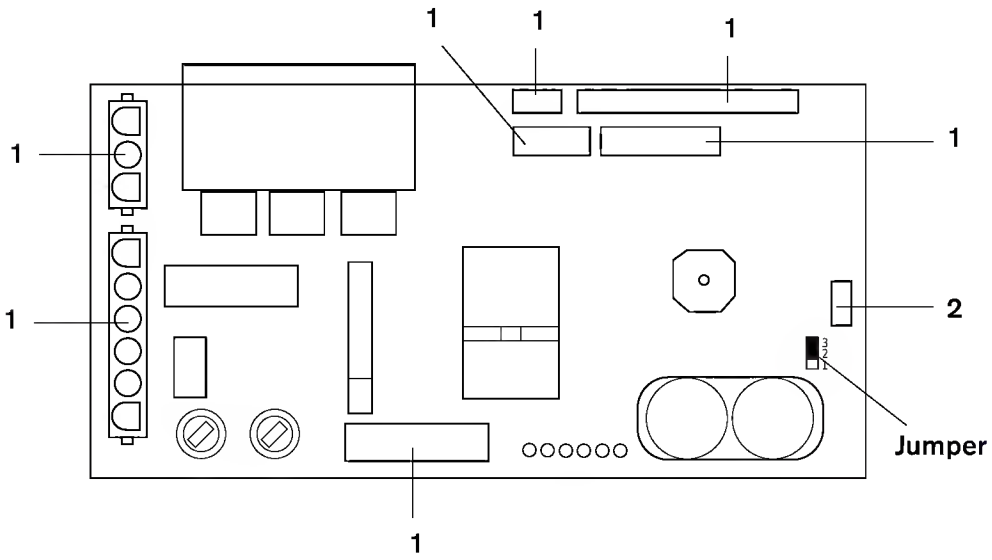

Fig. 44: Top view on the WT Power PCB, disconnecting connectors

- Disconnect the connector of the loudspeaker from the WT Front PCB.
- Remove the plate with the loudspeaker and place it aside.
- Remove the defective WT Power PCB by sliding it off the guide rails.
- Push the new WT Power PCB into the control unit.
- Connect all cable connectors to the WT Power PCB (Connect ON/OFF switch according to previous markings).
- Mount the plate with the loudspeaker into the control unit.
- Connect the connector of the loudspeaker to the WT Front PCB.
- Mount the control unit using the reverse method of that used for dismounting.
- Mount the control unit on the Babytherm trolley.
- Check the Babytherm using the Test Certificate, see "Test Certificate".

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5.4 WT Controller PCB

5.4.1 General Information About the WT Controller PCB

If a repair should become necessary, replace the complete WT Controller PCB. The EPROM and the jumper are not included in the new WT Controller PCB. Use those from the old WT Controller PCB.

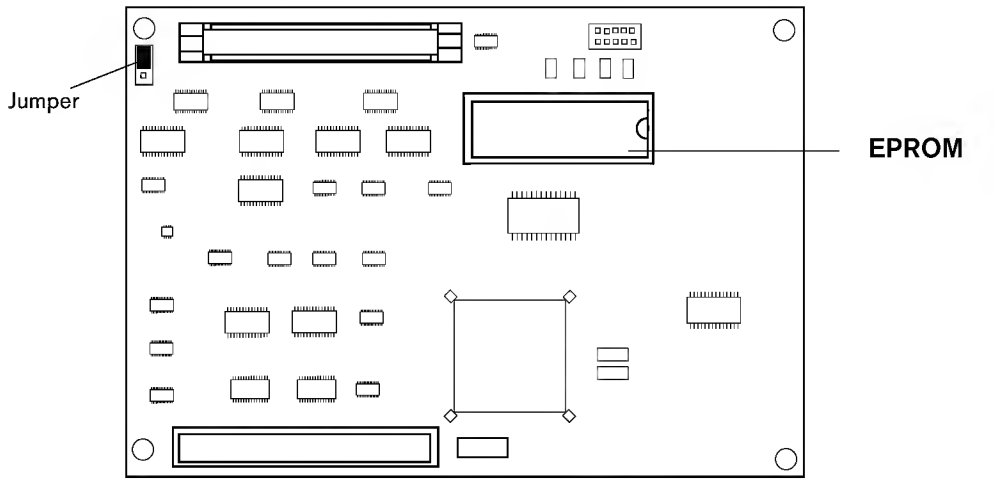

Fig. 45: WT Controller PCB

If the jumper is in the wrong position, error "53" will appear on the 7-segment display when accessing the DrägerService Mode.

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5.4.2 Checking the WT Controller PCB

- Switch off the control unit.
- Hang the control unit on the trolley (see Repair Instructions, "Dismounting the Control Unit from the Trolley").
- Open the control unit (see Repair Instructions "Opening the Control Unit").
- Plug the Babytherm power cord into the mains socket-outlet.
- Switch on the Babytherm.
- Check the WT Controller PCB using the Service LEDs.

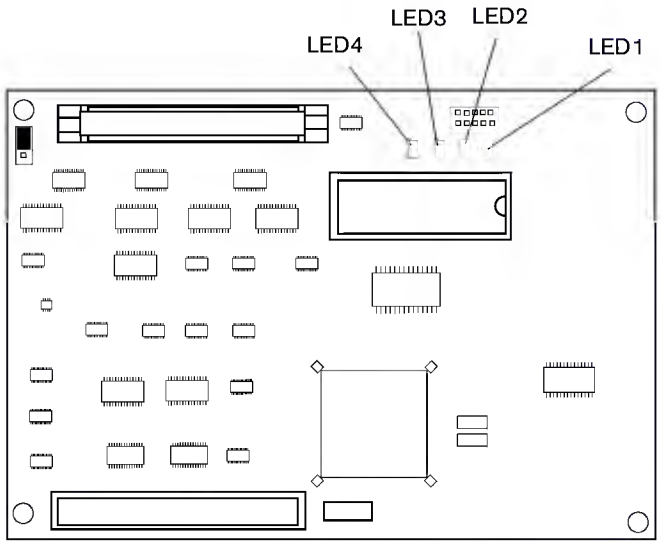

Fig. 46: WT Controller PCB

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During the Power-On-Test

LED 1 on	EPROM is defective.
LED 1 off	EPROM is OK.
LED 2 on	RAM is defective.
LED 2 off	RAM is OK.
LED 3 on	WT Front PCB is defective.
LED 3 off	
LED 4 on	LED 4 lights up continuously. WT Controller PCB is OK.
LED 4 off	WT Controller PCB is defective.

After the Power-On-Test

Number of Keys Pressed on Control Unit	Response
1	LED 1 flashes.
2	LED 1 and LED 2 flash.
3	LED 1, LED 2, and LED 3 flash.
0	LED 1, LED 2, and LED 3 are off.

5.4.3 Replacing the WT Controller PCB

- Switch off the control unit.
- Hang the control unit on the trolley (see Repair Instructions, "Dismounting the Control Unit from the Trolley").
- Open the control unit (see Repair Instructions "Opening the Control Unit").
- Disconnect the loudspeaker connector from the WT Front PCB.
- Remove the plate with the loudspeaker and place it aside.

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- Remove the fixing screw **1** and washer.

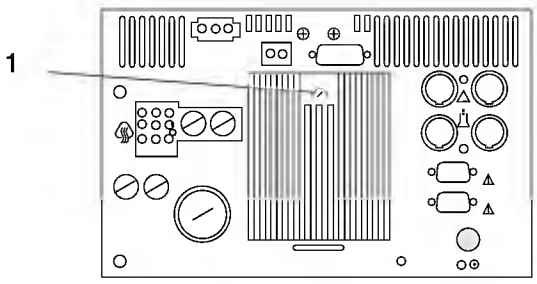

Fig. 47: Rear view of the control unit, removing the fixing screw

- Disconnect the grounding cable of the WT Power PCB from the grounding terminal.
- Disconnect the cable connectors **2** from the WT Power PCB.
- Mark the mounting position of the cable connector (ON/OFF switch) **2** for later reassembly.
- Disconnect the cable connector **3** of the ON/OFF switch.

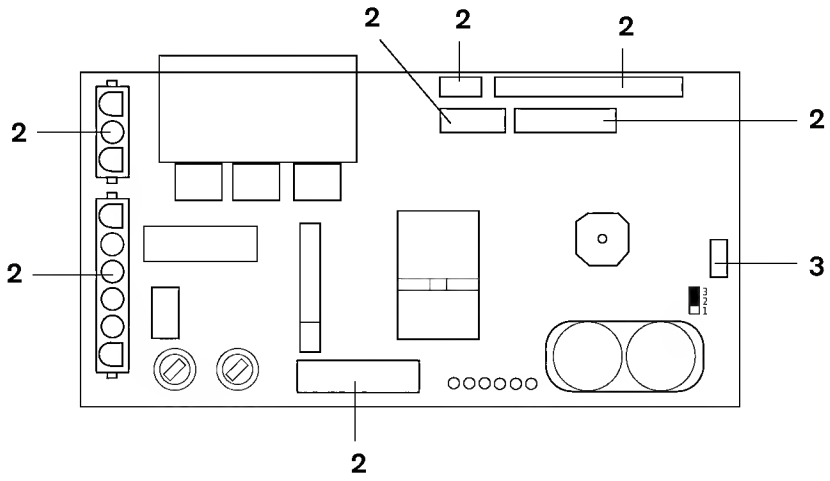

Fig. 48: WT Power PCB, removing cable connections

- Slide the WT Power PCB out of the guide rails.

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- Disconnect the cable connector **1** from the WT Controller PCB.
- Compress the alignment pins **2** and remove the defective WT Controller PCB.
- Remove the EPROM **3** from the defective WT Controller PCB and mount it onto the new WT Controller PCB.
- Remove the Jumper **4** and mount it onto the new WT Controller PCB (positions 2 and 3).

Make sure to mount the EPROM correctly (observe direction) into the EPROM mount. Make also sure to plug the jumper in the correct position.

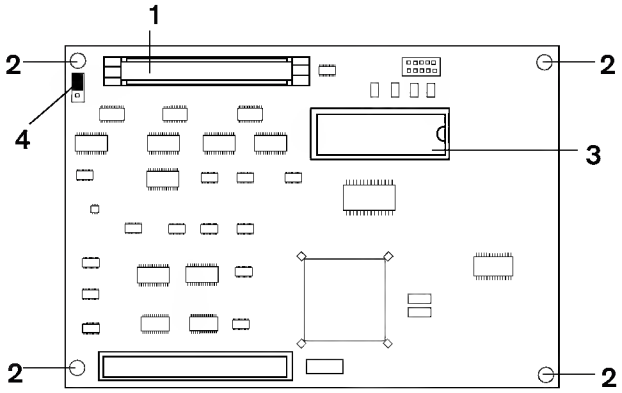

Fig. 49: WT Controller PCB

- Mount the new WT Controller PCB into the control unit.
- Connect the cable connectors to the WT Controller PCB.
- Mount the WT Power PCB into the control unit.
- Connect the cable connectors to the WT Power PCB.
- Connect the cable connectors to the WT Front PCB.
- Mount the plate with the loudspeaker into the control unit.
- Connect the cable connectors of the loudspeaker to the WT Front-Com.
- Mount the control unit using the reverse method used for dismounting.
- Mount the control unit on the Babytherm trolley.
- Plug the Babytherm power cord into the mains socket-outlet.
- Switch on the Babytherm.

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- Program the flash EPROM using the DrägerService Mode.
- Check the Babytherm using the Test Certificate, see "Test Certificate".

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5.5 WT Relay PCB

5.5.1 General Information About the WT Relay PCB

If a repair should become necessary, replace the complete WT Relay PCB.

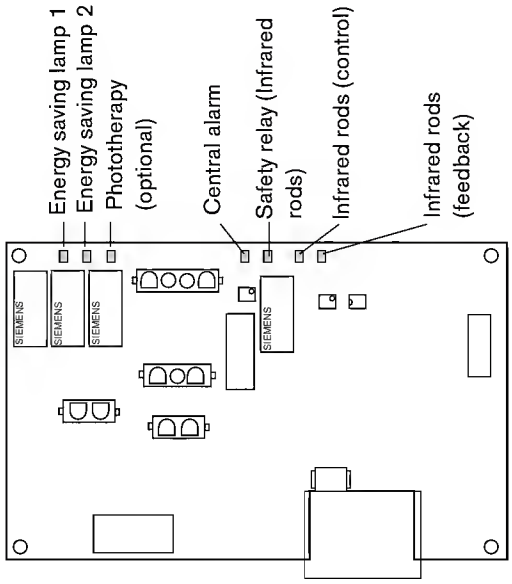

Fig. 50: Service LEDs on the WT Relay PCB

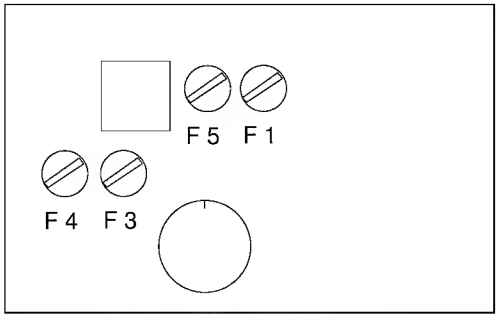

Fig. 51: Rear view of the WT Relay PCB

Fuse	100 V	120 V	240 V	
F 4	T 1	T 1	T 1	H250 V IEC 127-2/V
F 3	T 5	T 5	T 5	H250 V IEC 127-2/V
F 5	T 4	T 3.15	T 2	L250 V IEC 127-2/III
F 1	T 6.3	T 6.3	T 3.15	L250 V IEC 127-2/III

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5.5.2 Checking the WT Relay PCB using the DrägerService Mode and the LEDs

- Open the control unit (see Repair Instructions "Opening the Control Unit").
- Switch off the Babytherm using the ON/OFF switch.

The Babytherm carries out the self-test.

- Press and hold the "silence" key and the "OK" key simultaneously for about 5 seconds.
- Select DrägerService Mode using the "skin/man" key.
- Select mode 18 using the "arrow" key.
- Press the "check" key.

The safety relay LED (infrared rods) 1 on the WT Relay PCB should come on.

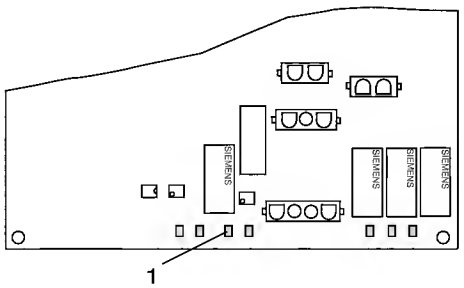

Fig. 52: WT Relay PCB

- Press the "check" key.

The safety relay LED (infrared rods) 1 on the WT Relay PCB should go off.

- Press the "check" key.
- Select mode 19 using the "arrow" key.
- Press the "check" key.

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The "infrared rods (control)" LED **1** and the "infrared rods (feedback)" LED **2** on the WT Relay PCB should flash.

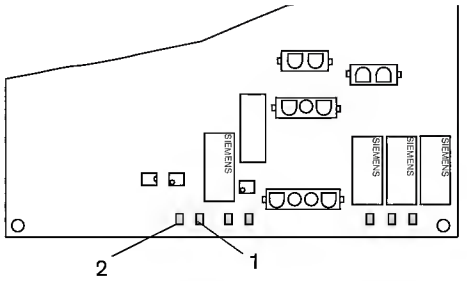

Fig. 53: WT Relay PCB

- Press the "check" key.

The "infrared rods (control)" LED **1** and the "infrared rods (feedback)" LED **2** on the WT Relay PCB should go off.

- Select mode 20 using the "arrow" key.
- Press the "check" key.

All phototherapy lamps on the radiant heater should come on.

The "phototherapy (option)" LED **3** on the WT Relay PCB should come on.

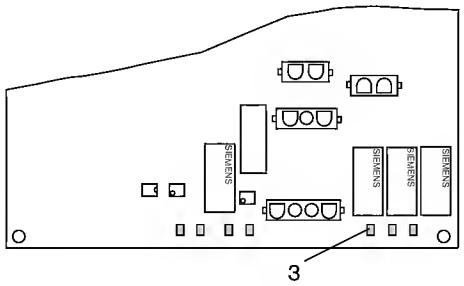

Fig. 54: WT Relay PCB

- Press the "check" key.

All phototherapy lamps on the radiant heater should go off. The "phototherapy (option)" LED **3** on the WT Relay PCB should go off.

- Select mode 21 using the "arrow" key.
- Press the "check" key.

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The small energy-saving lamp on the radiant heater should come on. The "energy-saving lamp 1" LED 1 on the WT Relay PCB should come on.

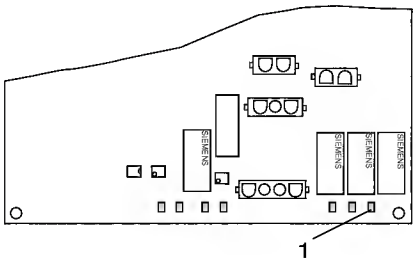

Fig. 55: WT Relay PCB

- Press the "check" key.

The small energy-saving lamp on the radiant heater should go off.

The "energy-saving lamp 1" LED 1 on the WT Relay PCB should go off.

- Select mode 22 using the "arrow" key.
- Press the "check" key.

The large and the small energy-saving lamps on the radiant heater should come on.

The "energy-saving lamp 2" LED **2** should come on.

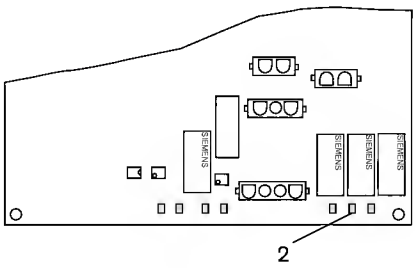

Fig. 56: WT Relay PCB

- Press the "check" key.

The large and the small energy-saving lamps on the radiant heater should go off.

The "energy-saving lamp 2" LED **2** should go off.

- Mount the bottom plate onto the control unit.
- Check the Babytherm using the Test Certificate, see "Test Certificate".

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5.5.3 Replacing the WT Relay PCB

- Switch off the control unit.
- Hang the control unit on the trolley (see Repair Instructions, "Dismounting the Control Unit from the Trolley").
- Open the control unit (see Repair Instructions "Opening the Control Unit").
- Disconnect the cable connectors **1**.
- Disconnect the cable connector **2** from the WT Power PCB.

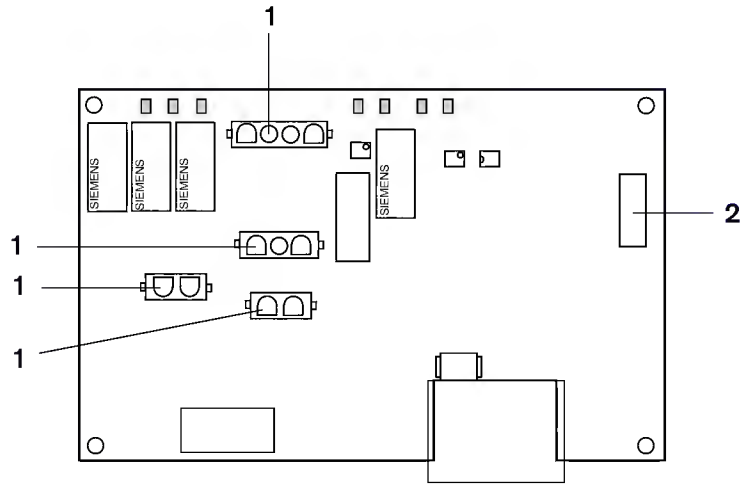

Fig. 57: WT Relay PCB, disconnecting cable connectors

- Remove the fixing screw and washer **3**.

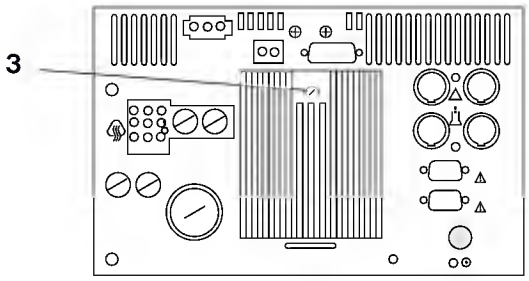

Fig. 58: Rear view of the control unit, removing the fixing screw

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- Compress the alignment pins 1 and remove the defective WT Relay PCB.

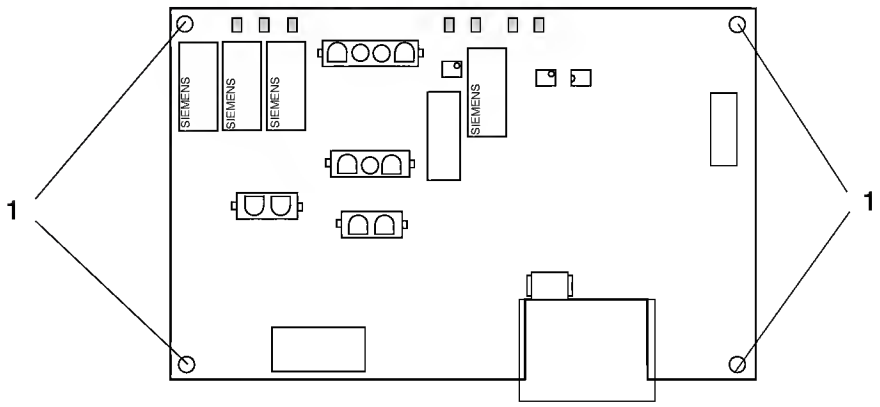

Fig. 59: Removing the WT Relay PCB

- Replace the defective WT Relay PCB with a new one.
- Connect the cable connectors to the WT Relay PCB.
- Connect the cable connector of the WT Relay PCB to the WT Power PCB.
- Mount the control unit using the reverse method used for dismounting.
- Mount the control unit on the Babytherm trolley.
- Plug the Babytherm power cord into the mains socket-outlet.
- Switch on the Babytherm.
- Check the Babytherm using the Test Certificate, see "Test Certificate.

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5.6 WT Front PCB

5.6.1 General Information About the WT Front PCB

If a repair should become necessary, replace the complete WT Front PCB.

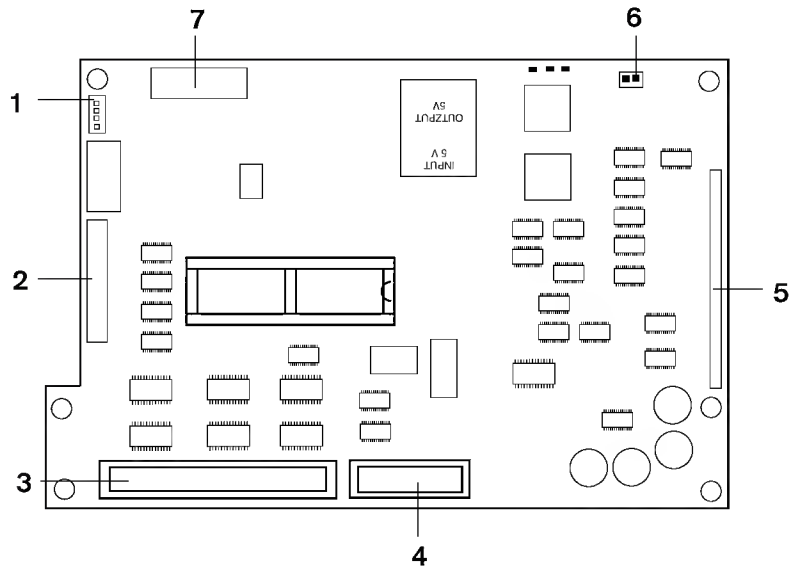

Fig. 60: WT Front PCB

Legend

1	from Interface
2	from WT LED PCB
3	to WT Controller PCB
4	to WT Power PCB
5	from keypad
6	from loudspeaker
7	from interfaces

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5.6.2 Replacing the WT Front PCB

- Switch off the control unit.
- Hang the control unit on the trolley (see Repair Instructions, "Dismounting the Control Unit from the Trolley").
- Open the control unit (see Repair Instructions "Opening the Control Unit").
- Disconnect the loudspeaker cable connector **1** from the WT Front PCB.
- Remove the plate with the loudspeaker and place it aside.
- Disconnect the cable connector **2**.
- Disconnect the cable connector **3**.

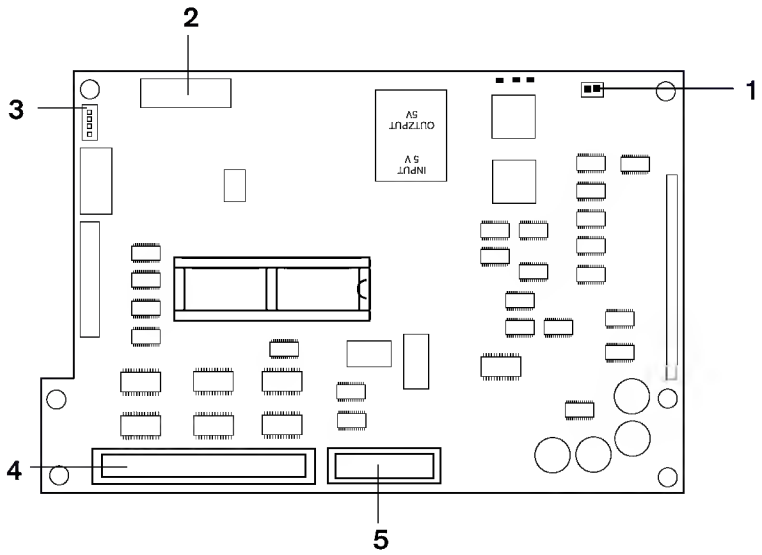

Fig. 61: WT Front-Com PCB, removing cable connectors

- Disconnect the cable connector **4** from the WT Controller PCB.
- Disconnect the cable connector **5** from the WT Power PCB.
- Lift front slightly up until it disengages and place it in front of the control unit.
- Push the terminal end of the grounding cable out of the front.

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- Disconnect the cable connector **1**.
- Carefully disconnect the cable connector **2**.
- Remove the nuts **3**.

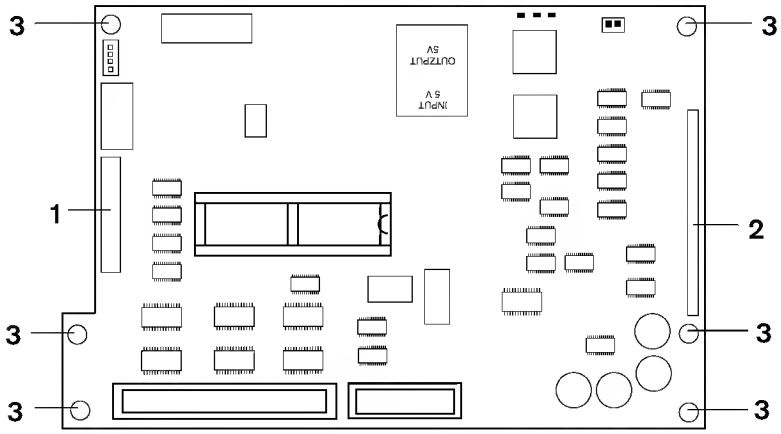

Fig. 62: WT Front PCB, disconnecting cable connectors and removing nuts

- Carefully remove the WT Front PCB from the WT LED PCB.
- Replace the defective WT Front PCB with a new one.
- Mount the WT Front PCB on the front.
- Connect the cable connectors to the WT Front PCB.
- Connect the cable connectors to the WT Controller PCB.
- Mount the front into the control unit.
- Mount the plate with the loudspeaker into the control unit.
- Connect the cable connector of the loudspeaker to the WT Front PCB.
- Mount the control unit using the reverse method used for dismounting.
- Mount the control unit on the Babytherm trolley.
- Plug the Babytherm power cord into the mains socket-outlet.
- Switch on the Babytherm.
- Check the Babytherm using the Test Certificate, see "Test Certificate".

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5.7 8004 WT LED PCB/8010 WT LED PCB

5.7.1 General Information About the 8004 WT LED PCB/8010 WT LED PCB

If a repair should become necessary, replace the complete 8004 WT LED PCB or 8010 WT LED PCB.

8004 WT LED PCB and 8010 WT LED PCB have different order numbers. Make sure to state the correct order number when ordering PCBs.

5.7.2 Replacing the 8004 WT LED PCB/8010 WT LED PCB

- Switch off the control unit.
- Hang the control unit on the trolley (see Repair Instructions, "Dismounting the Control Unit from the Trolley").
- Open the control unit (see Repair Instructions, "Opening the Control Unit").

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- Disconnect the loudspeaker cable connector **1** from the WT Front PCB.
- Remove the plate with the loudspeaker and place it aside.
- Disconnect the cable connector **2**.
- Disconnect the cable connector **3**.
- Disconnect the cable connection **4** from the WT Controller PCB.
- Disconnect the cable connection **5** from the WT Power PCB.

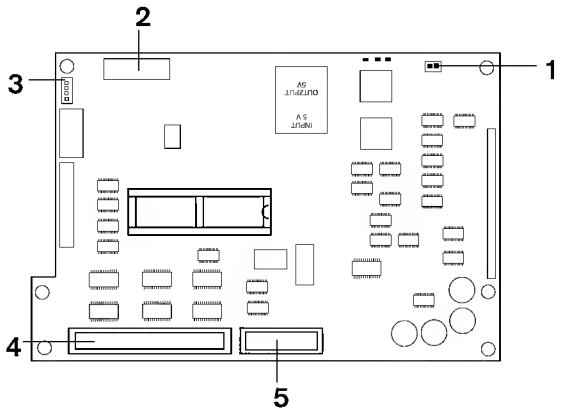

Fig. 63: WT Front PCB, disconnecting the cable connectors

- Remove the terminal end of the grounding cable from the front.
- Lift front slightly up until it disengages and place it in front of the control unit.

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- Disconnect the cable connector **1**.
- Carefully disconnect the cable connector **2**.
- Remove the nuts **3**.

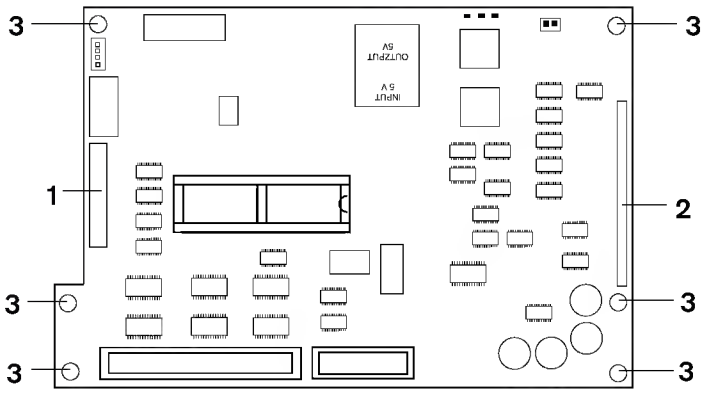

Fig. 64: WT Front PCB, removing the cable connectors and the nuts

- Place the WT Front PCB aside.
- Remove the nuts and washers **4**.

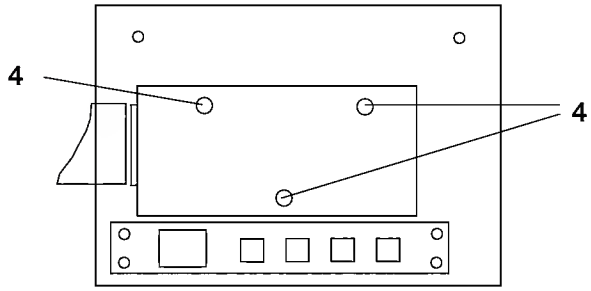

Fig. 65: Removing the WT LED PCB (front view)

- Disengage the WT LED PCB from the studs.
- Replace the defective WT LED PCB with a new one.
- Secure the WT LED PCB to the front using the nuts and washers.
- Mount the WT Front PCB to the front using the fixing screws.
- Connect the cable connectors to the WT Front PCB.
- Mount the front into the control unit.
- Connect the cable connectors to the WT Controller PCB.

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- Mount the plate with the loudspeaker into the control unit.
- Connect the loudspeaker cable connector to the WT Front PCB.
- Mount the control unit using the reverse method used for dismounting.
- Mount the control unit on the Babytherm trolley.
- Plug the Babytherm power cord into the mains socket-outlet.
- Switch on the Babytherm.
- Check the Babytherm using the Test Certificate, see "Test Certificate".

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5.8 Text Display

5.8.1 General Information About the Text Display

If a repair should become necessary, replace the complete text display assembly.

5.8.2 Checking the Text Display Using the DrägerService Mode

- Check the text display using the DrägerService Mode, see "Mode c08: Adjusting the Contrast of the Text Display".

5.8.3 Replacing the Text Display

- Switch off the control unit.
- Hang the control unit on the trolley (see Repair Instructions, "Dismounting the Control Unit from the Trolley").
- Open the control unit (see Repair Instructions, "Opening the Control Unit").
- Disconnect the loudspeaker cable connector **1** from the WT Front PCB.
- Remove the plate with the loudspeaker and place it aside.
- Disconnect the cable connector **2**.
- Disconnect the cable connector **3**.
- Disconnect the cable connection **4** from the WT Controller PCB.
- Disconnect the cable connection **5** from the WT Power PCB.

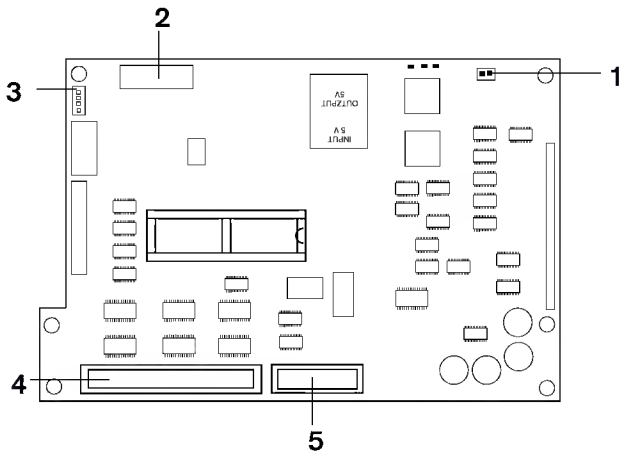

Fig. 66: WT Front PCB, disconnecting the cable connectors

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- Remove the terminal end of the grounding cable from the front.
- Lift front slightly up until it disengages and place it in front of the control unit.
- Disconnect the cable connector **1**.
- Carefully disconnect the cable connector **2**.
- Remove the nuts **3**.

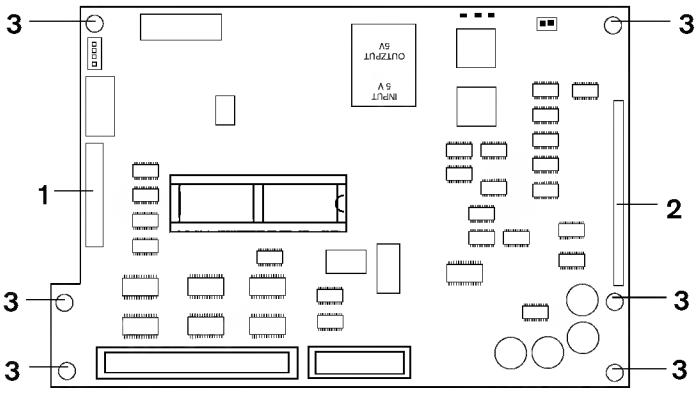

Fig. 67: WT Front PCB, removing the cable connectors

- Place the WT Front PCB aside.
- Disengage the text display from the studs.
- Replace the defective text display with a new one.
- Mount the WT Front PCB to the front using the fixing screws.
- Connect the cable connectors to the WT Front PCB.
- Mount the front into the control unit.
- Connect the cable connectors to the WT Controller PCB.
- Mount the plate with the loudspeaker into the control unit.
- Connect the loudspeaker cable connector to the WT Front PCB.
- Mount the control unit using the reverse method used for dismounting.
- Mount the control unit on the Babytherm trolley.
- Plug the Babytherm power cord into the mains socket-outlet.
- Switch on the Babytherm.
- Check the Babytherm using the Test Certificate, see "Test Certificate".

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5.9 WT Sensor PCB

5.9.1 General Information About the WT Sensor PCB

If a repair should become necessary, replace the complete WT Sensor PCB.

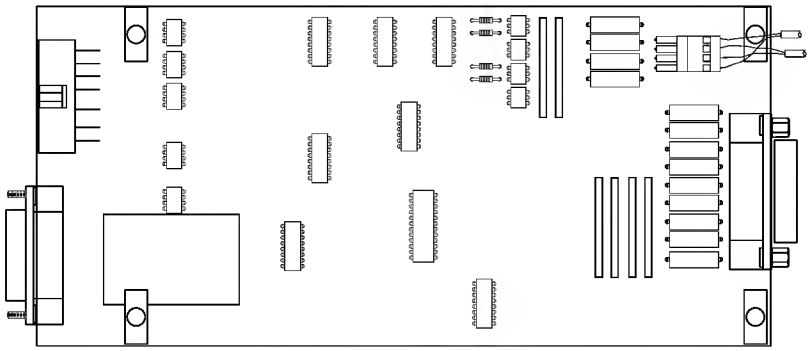

Fig. 68: WT Sensor PCB

5.9.2 Checking the WT Sensor PCB Using the DrägerService Mode

- Check the mattress temperature sensors using the DrägerService Mode as follows:
  - "Mode d03: Testing the Mattress Temperature Channel 1 (Babytherm 8010)"
  - "Mode d04: Testing the Mattress Temperature Channel 2 (Babytherm 8010)"
  - "Mode d05: Testing the Mattress Temperature Channel 3 (Babytherm 8010)"
  - "Mode d06: Testing the Mattress Temperature Channel 4 (Babytherm 8010)"
- Check the WT Sensor PCB using the DrägerService Mode: see "Mode d10: Displaying WT Sensor PCB Voltage".
- Check the skin-temperature sensors using the DrägerService mode as follows:
  - "Mode d16: Displaying the Skin Temperature Channel 1 and the Reference Value".
  - "Mode d17: Displaying the Skin Temperature Channel 2 and the Reference Value".

5.9.3 Replacing the WT Sensor PCB

- Switch off the control unit.
- Unplug the Babytherm power cord from the mains socket-outlet.

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Electrostatic discharge may damage electrostatic sensitive devices. **Use a static-dissipative mat and a wrist strap when handling electrostatic sensitive devices.**

- Remove the fixing screws and washers **1** which secure the sensor module to Babytherm.

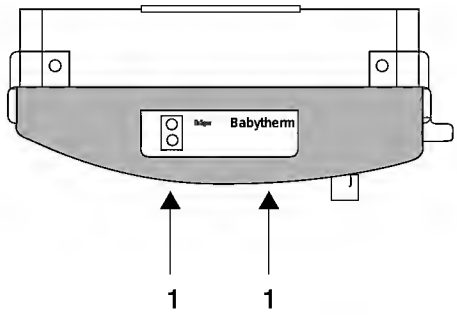

Fig. 69: Side view of the resting surface, removing the fixing screws

- Pull the sensor module slightly out.
- Remove the cable connectors **2**.

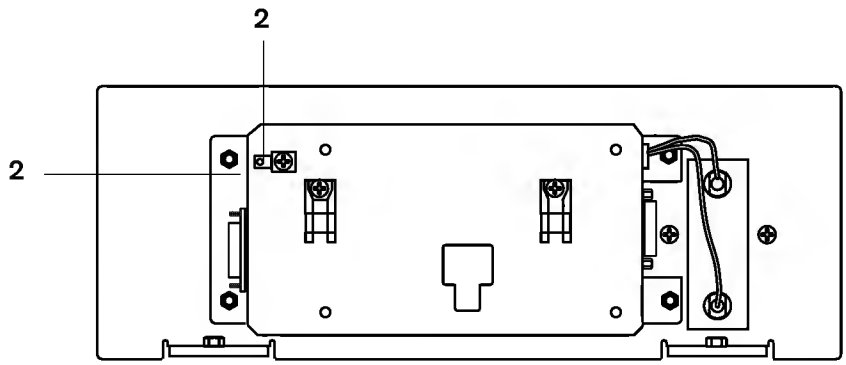

Fig. 70: Sensor module (dismounted), removing the cable connectors

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- Remove the cable connector **1**.
- Remove the cable connector **2**.

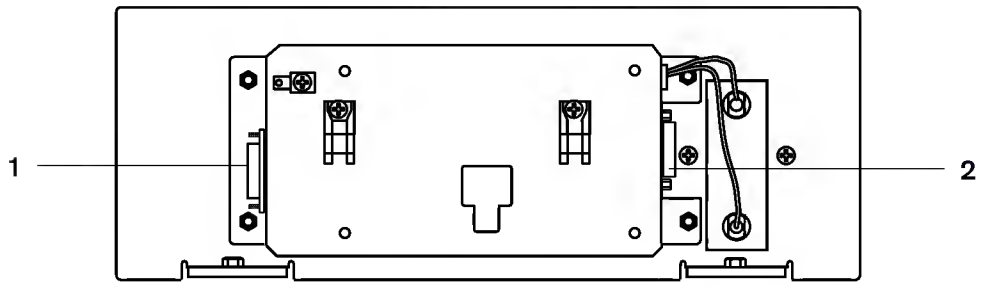

Fig. 71: Sensor module (dismounted), removing the cable connectors

- Remove the fixing screws and washers **3**.

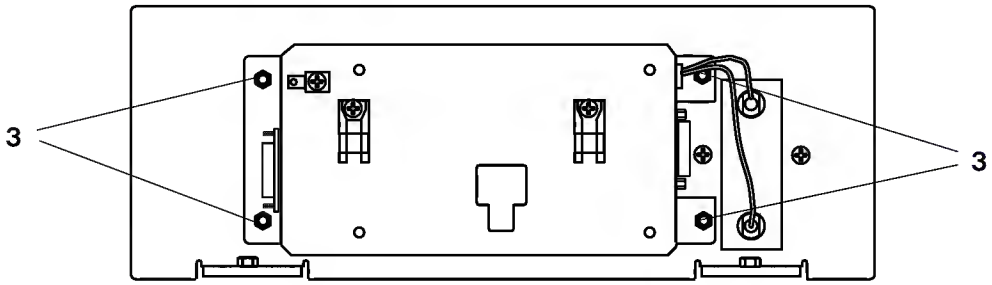

Fig. 72: Sensor module (dismounted), removing the fixing screws

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- Mark the position of the cable connector **1** for later reassembly.
- Slightly lift the cover of the sensor module and remove the cable connector **1**.

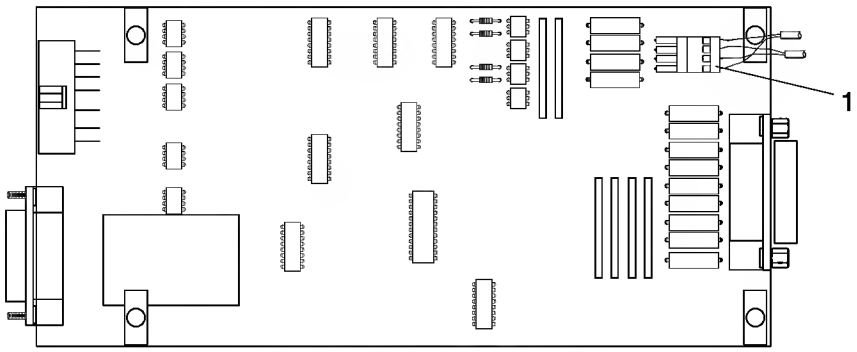

Fig. 73: WT Sensor PCB, removing the cable connector

- Push the sensor connector cables **2** together and carefully thread the sensor connecting cable **2** and the cable gland out of the cover **3**.

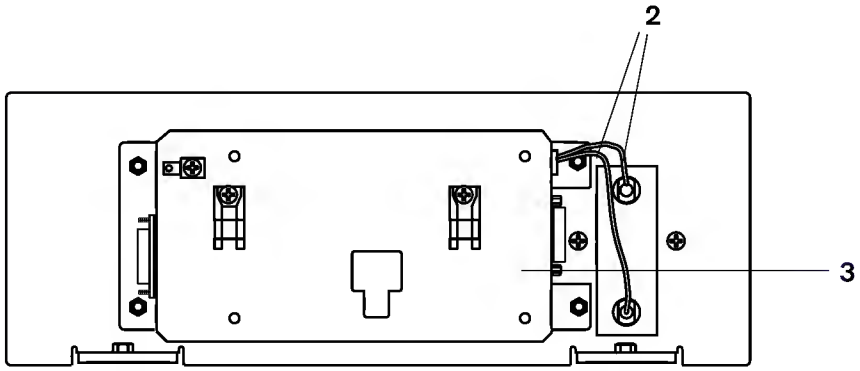

Fig. 74: Sensor module (dismounted), threading the sensor connecting cable and the cable gland out of the cover

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- Compress the retaining clamps 1 of the WT Sensor PCB and remove the WT Sensor PCB.

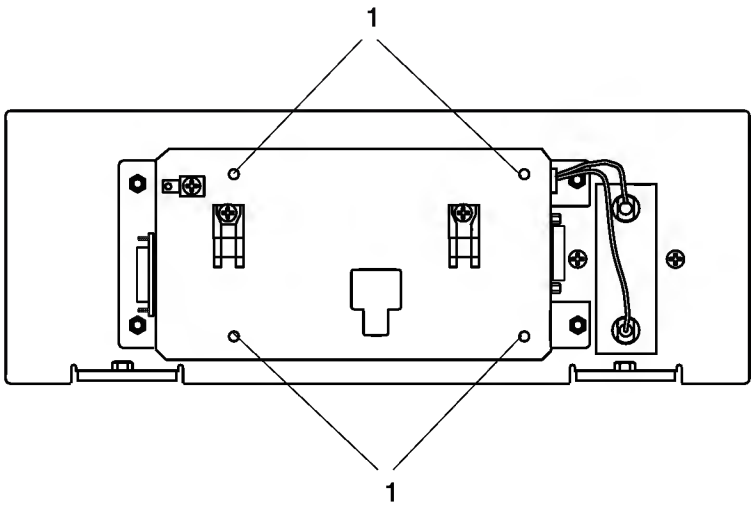

Fig. 75: Sensor module (dismounted), removing the WT Sensor PCB

- Replace the defective WT Sensor PCB with a new one.
- Mount the WT Sensor PCB on the sensor module using the reverse method of that for dismounting.
- Connect the respective cable connector to the WT Sensor PCB. Observe previously marked position of the cable connector.
- Mount the sensor module into the resting surface.
- Plug the Babytherm power cord into the mains socket-outlet.
- Switch on the Babytherm.
- Check the WT Sensor PCB using the DrägerService Mode, see "Checking the WT Sensor PCB Using the DrägerService Mode".
- Check the Babytherm using the Test Certificate, see "Test Certificate".

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5.10 ON/OFF Switch

5.10.1 General Information About the ON/OFF Switch

If a repair should become necessary, replace the complete ON/OFF switch.

5.10.2 Checking the ON/OFF Switch

- Plug the Babytherm power cord into the mains socket-outlet and switch on the control unit.

After a short self-test, the Babytherm should switch to normal operating mode.

5.10.3 Checking the Power Failure Contact of the ON/OFF Switch

- Check the power failure contact of the ON/OFF switch using the DrägerService Mode, see "Mode d15: Testing the Power Failure Contact of the ON/OFF Switch".

5.10.4 Replacing the ON/OFF Switch

- Unplug the Babytherm power cord from the mains socket-outlet.
- Hang the control unit on the trolley (see Repair Instructions, "Dismounting the Control Unit from the Trolley").
- Open the control unit (see Repair Instructions, "Opening the Control Unit").
- Mark the position of the cable connector (ON/OFF switch) **1** for later reassembly.
- Disconnect the cable connector **1** from the WT Controller PCB.

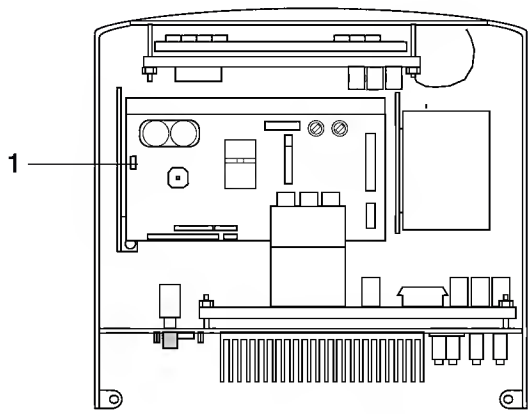

Fig. 76: Control unit (cover removed), disconnecting the cable connector

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- Remove the fixing nut 1 of the ON/OFF switch which is located on the rear panel of the control unit.

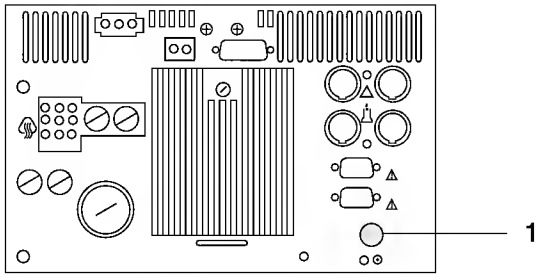

Fig. 77: Rear view of the control unit, removing the fixing nut

- Push the ON/OFF switch into the control unit and remove it.
- Screw the lock nut onto the new ON/OFF switch.
- Secure the new ON/OFF switch using the fixing nut.
- Connect the cable connector of the ON/OFF switch to the WT Power PCB. Observe the previously marked position of the ON/OFF switch.
- Mount the control unit using the reverse method of that used for dismounting.
- Mount the control unit on the Babytherm trolley.
- Check the Babytherm using the Test Certificate, see "Test Certificate".

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6 Trolley

6.1 Trolley Without Height Adjustment

6.1.1 Removing a Castor

- Remove the stud screw **1**, if fitted.
- Pull up the blanking cap.
- Jack the trolley near the castor to be removed.
- Beat out the castor using a hammer (approx. 0.2 to 0.5 kg) **2** and a pin punch **3**.

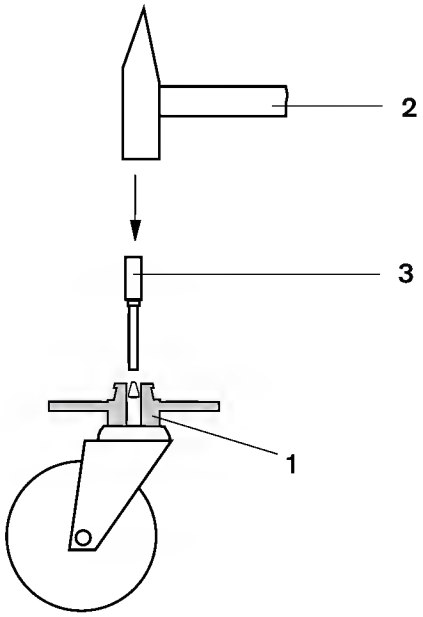

Fig. 78: Removing the castor

6.1.2 Mounting a Castor

- Mount the retaining ring (included in the set) onto the new castor.
- Mount the new castor.
- Mount the blanking cap.

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6.2 Trolley With Height Adjustment

6.2.1 Castor Pin

- An orange cap holds the castor pin in place (in the tube).

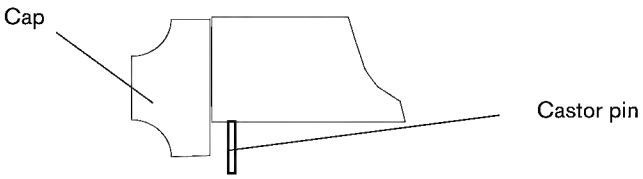

Fig. 79: Cap

6.2.2 Replacing the Cap

- Pry the castor off the trolley.

If the castor cannot be pried off easily, insert two screwdrivers between cap and trolley and press the cap slightly towards A (see the following Figure).
To avoid damage do not use plastic parts as fulcrum to pry the castor off.

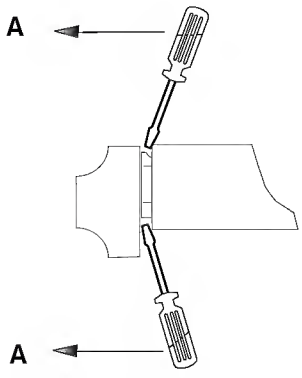

Fig. 80: Removing the castor pin

- Saw off the protruding cap flush with the trolley.
- Using a screwdriver, push out the castor pin from inside of the trolley.
- Remove any remaining parts of the cap from the trolley.
- Insert the new cap into the trolley and mount the castor.

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7 Resting Surface

The bottom section of the resting surface tilt mechanism is connected to the base plate with four hexagon socket head bolts. This section contains the resting surface with support being provided on one side by rollers and the other side by Teflon strips as anti-friction bearings. The resting surface is fixed by way of a gear mechanism in the bottom section and the latch for the mechanical system of the resting surface tilt mechanism.

7.1 Function Test of the Resting Surface Tilt Mechanism

- Check that the two return springs **1** are fitted.

The spring force must be sufficient to reliably return the lever to its initial position.

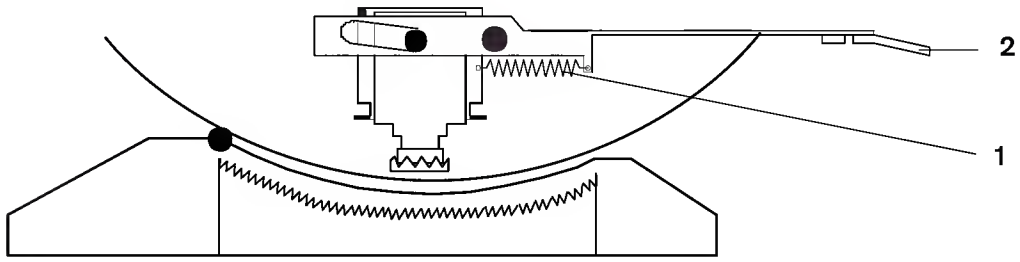

Fig. 81: Resting surface tilt mechanism

- Pull out the handle of the notching mechanism **2** approximately half way (20 mm).

The resting surface should remain fixed in every position.

- Pull out the handle of the notching mechanism **2** to 3/4 of overall distance (30 mm).

The resting surface should move from position to position without excess noise. The functional test of the resting surface tilt mechanism is the same for both mounted and dismounted states.

The notching mechanism must be calibrated or the appropriate parts replaced if the resting surface releases prematurely or too late or the notching mechanism does not lock securely in each position. If the resting surface is already fitted, these adjustments can be made through an opening in the base plate.

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7.2 Visual Inspection of the Resting Surface Tilt Mechanism

7.2.1 Dismounting the Resting Surface

Procedure:

- Unplug the Babytherm power cord from the mains socket-outlet.
- Remove the four hexagon socket head bolts, located under the resting surface.
- Lift the resting surface from the top of the pedestal and place it on end on the pedestal housing.

Make sure not to squeeze the three electrical wires between the top of the pedestal and the resting surface.

- Check gear teeth **1** for wear.
- Remove screws **2** and check gear teeth **3** of the resting surface tilt mechanism for wear. If necessary, replace worn parts.
- Mount the notch.
- Grease **only** the mechanical parts of the resting surface interlock with Molykote 55M **(do not grease the sliding bearings)**.

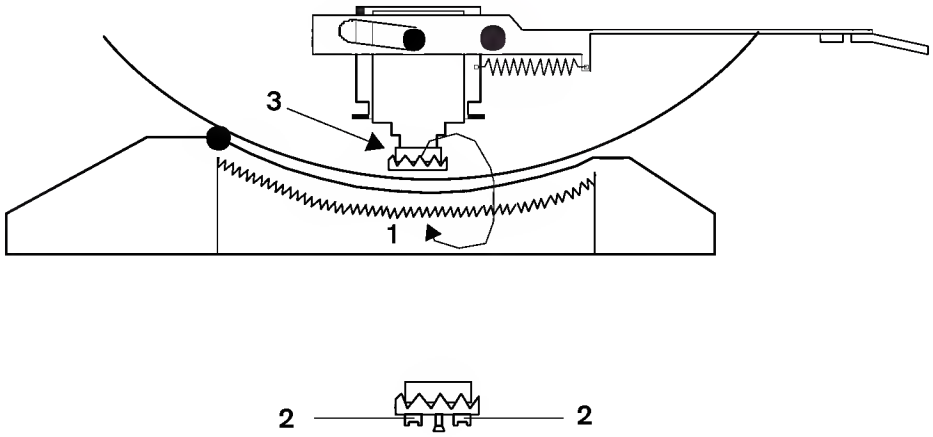

Fig. 82: Resting surface tilt mechanism

- Repeat the functional test for the resting surface tilt mechanism and adjust the resting surface tilt mechanism as described below.

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7.2.2 Adjusting the Resting Surface Tilt Mechanism

The following adjustment should be made if the resting surface releases prematurely or too late, or if the notching mechanism does not lock securely in each position:

Resting Surface Releases Prematurely:

- Remove screws **1**.
- Turn screw **2** a few turns counter-clockwise.
- Apply UHU-Plus to the thread of screw **1** and tighten.

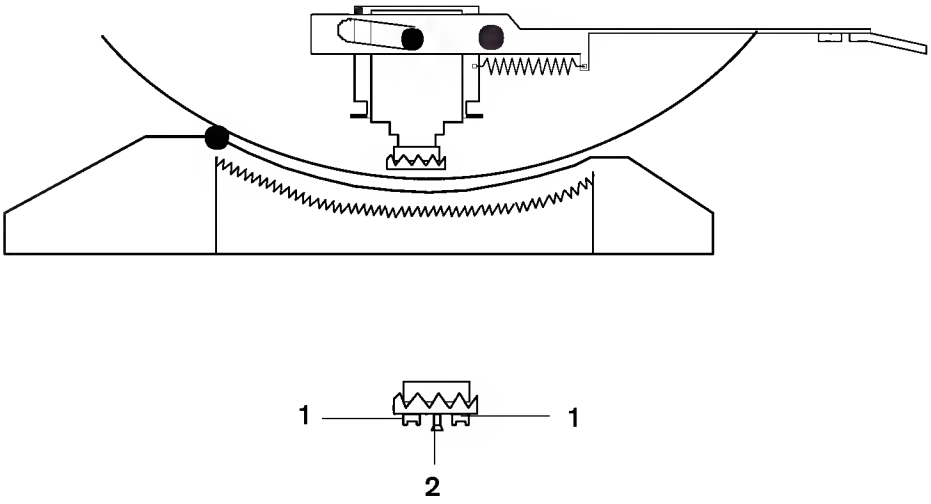

Fig. 83: Resting surface tilt mechanism

- Repeat the functional test for the resting surface tilt mechanism.

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Resting Surface Releases too Late:

- Remove screws **1**.
- Turn screw **2** a few turns clockwise.
- Apply UHU-Plus to the thread of screw **1** and tighten.

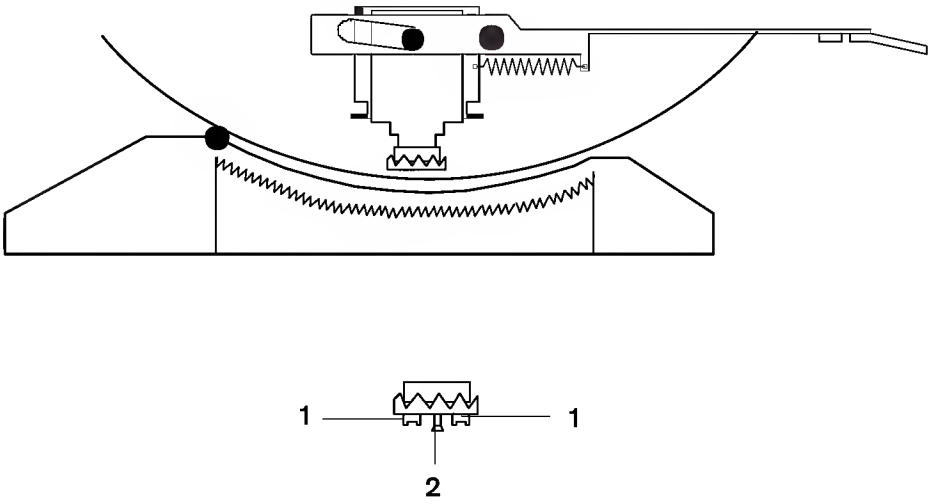

Fig. 84: Resting surface tilt mechanism

- Repeat the functional test for the resting surface tilt mechanism.

7.3 Re-Mounting the Resting Surface

- Lift the resting surface from the pedestal housing and adjust the resting surface to the correct position.
- Secure the resting surface using the four hexagon-socket bolts.

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7.4 Safety Check

Protective Conductor Resistance:

- Measure the protective conductor resistance. (Measure only protective conductor resistance to housing of control unit and the grounding pin, the heating plate should not be connected to protective conductor.)

The protective conductor resistance should be less than 0.2 ohms.

Leakage Current or Equivalent Leakage Current:

- Measure the leakage current or equivalent leakage current.

The leakage current or equivalent leakage current should be < 1 mA.

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8 Resting Surface Heater (Babytherm 8010)

8.1 General Information About the Resting Surface Heater

The heating plate has a 6 mm aluminum supporting plate upon which a heating foil is glued. Two twin-temperature sensor are secured on this supporting plate with screws.

8.2 Checking the Resting Surface Heater

Check the resting surface heater if there is doubt about its heating accuracy.

Check the resting surface at a room temperature of 20 °C to 30 °C as described below.

Do not switch on the radiant heater during this check.

- Adjust the target value of the resting surface to 31 °C.
- Place the gel mattress on the aluminum plate.
- Allow the Babytherm to reach an actual value of 31 °C.

The resting surface heater should adjust itself to a temperature of 31 °C.

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8.3 Dismounting the Heating Plate

- Unplug the Babytherm power cord from the mains socket-outlet.
- Remove the two screws (mounted on the inside) which secure the sensor module to the resting surface.
- Slide the sensor module out.
- Disconnect the plug-in connector of the resting surface temperature sensors from the sensor module.
- Disconnect the plug-in connection of the resting surface heater from the connector of the control unit.
- Dismount the hook rail by removing the eight screws.
- Remove the fastening nuts from the heating plate.
- Remove the heating plate and the seal. Note: If you have problems removing the heating plate from the resting surface, proceed as follows.
- Release the lever of the resting surface tilt mechanism and push the resting surface down.
- Insert appropriate tool through the opening in the resting surface and place it between base plate and heating plate (opening is located opposite of the lever of the resting surface tilt mechanism).
- Release the lever of the resting surface tilt mechanism and lift the resting surface.

8.4 Mounting the Heating Plate

- Thread the two cable connectors of the heating plate through the opening in the housing.
- Mount the heating plate and the seal on the resting surface.
- Secure the heating plate to the resting surface using the four fastening nuts.
- Secure the hook rail using the eight screws.
- Connect the plug-in connection of the resting surface heater to the connector of the control unit.
- Connect the plug-in connector of the resting surface temperature sensors to the sensor module.
- Push the sensor module into the resting surface.
- Secure the sensor module to the resting surface using the appropriate screws.

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8.5 Checking the Resting Surface Heater After Repair

- Assemble the Babytherm ready for operation.
- Check that the heating plate and the seal are fitted properly.
- Check that the resting surface heater is connected properly to the WT Sensor PCB.
- Set the temperature of the resting surface heater to 31 °C.
- Unplug the Babytherm power cord from the mains socket-outlet.

An audible and visible mains power failure alarm should be activated.

- Plug the Babytherm power cord into the mains socket-outlet.
- Allow the Babytherm to reach a temperature of 31 °C.

The Babytherm should reach the set temperature after approx. 20 to 30 minutes.

The temperature sensors can be checked using the DrägerService Mode.

8.5.1 Safety Check

Protective Conductor Resistance:

- Measure the protective conductor resistance. (Measure only protective conductor resistance to housing of control unit and the grounding pin. The heating plate should not be connected to protective conductor.)

The protective conductor resistance should be less than 0.2 ohms.

Leakage Current or Equivalent Leakage Current:

- Measure the leakage current or equivalent leakage current.

The leakage current or equivalent leakage current should be less than 1 mA.

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9 Lateral Panels and Corners

9.1 Checking Lateral Panels and Corners

- Check that lateral panels and corners securely lock into position.
- Replace lateral panels and corners if they do not lock securely or if they show signs of wear.

9.2 Removing the Corners

- Using a hammer, carefully loosen and remove corners.

9.3 Mounting the Corners

- Carefully work the corners into place using a hammer.

10 Lateral Panel Hinges

Hinges for the lateral panels can be replaced. To do this, a 2 mm bit and a drill are required.

10.1 Checking Lateral Panels, Corners, and Hinges after Repair

- Check that lateral panels lock securely.
- Check that all replacement parts are correctly fitted.
- Check that the resting surface tilt mechanism functions correctly.

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